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Original Lectures.

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ARTICLE I.

CLINICAL LECTURE DELIVERED DECEMBER 8, 1880, AT THE  
COLLEGE OF PHYSICIANS AND SURGEONS, NEW YORK. By  
Dr. A. Jacobi. (Reported for the CHICAGO MEDICAL JOURNAL  
AND EXAMINER.)

*Gentlemen* :—Here is a little girl whose shoulder was dislocated some time last week. She was brought to this clinic at that time and the luxation was reduced, but the arm cannot yet be moved without pain, and the shoulder is still swelled. This is evidently not precisely the condition which we should expect to find one week after the reduction of a simple dislocation. As I press the head of the humerus into the glenoid cavity, I feel a crackling sensation by which I know that there is some synovitis present. Now, what shall we do for that? The arm must have rest of course, but is there nothing else to be done? Counter irritation, yes; but what agent will you employ? Some one says, the tincture of iodine. In an older person that might do, but in children the skin is very delicate, and I think that the tincture of

iodine would irritate too much. There is an official ointment of iodide of potassium, but I believe it to be nearly inert. I do not think that the drug could be discovered in the urine even after this preparation has been used for days, therefore I do not recommend it. But the iodide of potassium (1) may be dissolved in glycerine (2 parts) and rubbed into the skin. In that way it is effective; or iodine may be used dissolved in oleic acid, but there is an objection to that preparation, owing to the fact that the oleic acid sometimes cauterizes. What I frequently use is iodoform mixed with collodion, one to two parts of iodoform to twenty of collodion. You may cover the affected part with this preparation two or three times a day, or you may use the iodoform as an ointment. The chief drawback to the use of iodoform is its intolerable odor. The addition of a few drops of the aromatic oil of thyme or bergamot will render that less apparent. This child has, however, another ailment which you all doubtless recognize—whooping cough. It has only been manifest one week, the mother says, but in addition to that statement, she says that the child has had a cough for some weeks previous. Pertussis has a prodromal stage of about three weeks, during which it is impossible to diagnose it with certainty, but where the cough gets worse instead of better, and that in spite of good treatment, proper care, and rest at home, especially if there be whooping cough in the neighborhood, you may suspect whooping cough is present, and not an ordinary bronchitis. The whoop appears during the third week of the attack and is due to a spasm of the laryngeal muscles. Pharmacy has been exhausted in search of remedies for the disease, and almost everything has been given for the relief of the little patient, particularly the narcotics and sedatives. Chloral hydrate, since its introduction by Leibreich, has been used a good deal, but I use it only in single doses each night, giving seven or eight grains to a child a year and a half old. You may add fifteen grains of the bromide of potassium or sodium. Of the bromide of ammonium rather less, however. It has seemed to me that the sedative effect of the bromide of ammonium is less than that of either of the other salts. The attacks of coughing and laryngeal spasm are more frequent at night time than during

the day. After making use of nearly all the drugs which have been recommended for pertussis the drug which I have found most successful is the one which I used many years ago, and that is belladonna. It always fails when the practitioner does not know how to use it. It must be given to do good, either in sufficient doses or not at all. To give drop doses of the tincture to this child would be useless. The drug must be given in doses sufficient to flush the cheeks, say four drops three times a day. If you find that within fifteen minutes after taking the dose the cheeks become flushed and remain so for half an hour afterward, the dose is sufficient. After three or four doses, you may have to increase the dose. Do so, drop by drop, as it is possible that within a fortnight you may be compelled to give three times the amount with which you started. You may never see dilatation of the pupils, dry throat or tongue, or very rarely, as it is not common for children to be so affected. This is about the only treatment which I have ever found effective. In the first week I expect no improvement, but in the second week I do, and at the end of the month I expect the cough to have ceased. This case appears to be a severe one because the child bleeds at the nose, which shows that there is some obstruction to the circulation in the upper part of the body. It is necessary for you to be on your guard whenever, in these cases, you have hæmorrhage occurring from mucous membranes, for you are likely to have also cerebral or spinal hæmorrhages, and these are more likely to happen according as the child is younger.

Case II. Norman N., five months old. "What is the matter with this child?" "He cries all the time." "Is there nothing else that you notice wrong about him?" "No, that is all." Now the baby cries very loud, as you see, and that very fact would exclude pneumonia or pleurisy as a cause of the child's suffering, for suffer he undoubtedly does, else he would not cry. The pain which causes him to cry must evidently be situated in such a part of the body as not to be increased by the movements of breathing. Were it in the chest—as every movement of the chest-wall would increase it—the child would not cry lustily as this child does, but feebly and with a short cry. The pain then must be situated in the joints or in the abdominal cavity. We can exclude

earache, a very common cause of the incessant crying of children, because the cry is incessant always, which it is not in this case; besides, the child has had these fretful spells for some time, ever since she weaned him, which was some while ago, and if earache had been the cause of the child's suffering, it would have terminated in suppuration before now. The pains from which the child suffers are intestinal, and due to improper feeding, especially in relation to the interval between the meals. At first, the mother says, she had an insufficient supply of milk for the child, so that in the beginning the baby was starved. Then, after weaning him, she fed him on condensed milk. At present the bones of the head are soft. They may have softened after having once been normal, which is probably the case here. The mother says the child's bowels move only once or twice a day, which, in a child of this age, amounts to constipation. She also says in regard to the color of the passages that they are yellow, not white, but it never does to trust the statements of mothers implicitly, and I shall ask to see one of the passages. It is as I have said. The mother was in error when she said the passages were yellow. What I show you in this napkin is whitish, clay-colored, certainly not yellow. So the mother, knowing that children's passages are yellow, ordinarily when asked about her own child, says that his passages are yellow too. What, then, is the cause of these clay-colored stools? There is either something too much in the food, as fat or casein, or the liver secretes too little bile. I think that the child's food contains too much fat and casein both, and it appears to me that here is the root of the evil, the cause of the fretful disposition of this baby. The child has been fed on condensed milk diluted with water. Now, condensed milk contains an enormous amount of sugar, besides fat and casein. The normal passages contain eleven to sixteen per cent. of fat undigested, which proves that if mother's milk contained less fat it would still be as nourishing as now. The white appearances in this passage, are fat and coagulated casein. It would require the microscope to determine which preponderates. In cow's milk there is more fat than in mother's milk, and condensed milk of course contains fat and sugar in excess. Now, when there is so much fat in the passages, the fat and casein act



as irritants in the intestinal canal, and, setting up a fermentation, give rise to flatulency, which of course in turn is the cause of much uneasiness and pain. There is the solution of the problem, the reason why this child cries so lustily and kicks so much. What is to be done to relieve him? If the cause of the trouble is an excess of fat, of course the first thing is to reduce the amount of fat which he is taking. Some one suggests that he should take as an antacid, lime water. Now, lime water contains only one part of lime to eight hundred parts of water, and consequently is not able to neutralize much acid, certainly not as much as is contained in the digestive tract of the child. It does good to be sure, but not in that way, but in a different direction. Lime water will aid in the digestion of casein, but it is slightly astringent and therefore ought not to be given in this case where constipation already exists. The use of condensed milk should be discontinued and fresh cow's milk should be substituted, with the addition of some oatmeal water, in this case because of the tendency to constipation. Take the common Irish meal and boil it in a sufficient quantity of water so that you have a transparent mucilaginous liquid. Strain it, and, adding a little salt and sugar, dilute an equal quantity of boiled milk with it and let the child take this preparation in place of the condensed milk. For the first few days, an occasional hot poultice to the bowels, or hot injections of fennel, or chamomile infusions, or catnip tea freshly made, will relieve the intestinal pains. Small doses of Dover's powder one-third to one-fourth of a grain, once or twice a day, will have a good effect. But of course the main thing which is necessary to restore this child to a condition of health is a complete and radical change in the diet, for as long as it continues to be fed on materials which it cannot assimilate, it will suffer from disturbances of digestion, and as a matter of course cannot thrive. (A week afterward the baby was presented with marked improvement.)

## ARTICLE II.

A CLINICAL LECTURE. By Samuel D. Gross, M.D., of Phila.  
Specially reported for the CHICAGO MEDICAL JOURNAL AND  
EXAMINER.

INTERNAL PILES.—This is a trouble for which you will be very frequently consulted. You notice this little tumor on the verge of the anus. It is characteristic in its appearance, and is the cause of great pain. The man first noticed its appearance yesterday afternoon, following a passage accompanied by a good deal of straining. The tumor is uncommonly large for a pile. It is of the usual bluish color, and imparts a decided sense of tightness to the touch. Hemorrhoidal tumors are of two kinds, external and internal. The internal pile is within the sphincter ani muscle and consists of a knot of hypertrophied arteries and veins. It is commonly soft and spongy in texture. The external hemorrhoid is of a very different character. It is external to the sphincter ani muscle, but it is very often strangulated by the contraction of that muscle. It consists of an extravasation of blood from the hemorrhoidal vessels, is, in fact a sort of apoplexy at the verge of the anus. As regards the treatment of an external hemorrhoid, Erichsen of London, and Bryant of Grey's Hospital, advise its immediate removal with a knife. This is a truly villainous practice, and attended with great risk of obstinate hæmorrhage. The American surgeon incises the tumor with a bistoury and presses out its contents—*i. e.*, the contained clot of blood. The structure of an external hemorrhoid consists entirely of this clot of blood. The slight operation relieves the pain and tension at once. As an after-treatment the parts should be well bathed with cold water and some medicine given to act on the liver and bowels.

MALIGNANT DISEASE OF THE LIP.—This man is a farmer and 55 years of age. He always enjoyed good health until April last, when following a slight local irritation in shaving, a small wart made its appearance on the outer portion of the upper lip.

This wart gradually increased in size. The man consulted a neighboring physician, who laid the wart open and cauterized it every day for a month, with the result you now see,—a roundish, lobulated ulcer, giving forth a sanious discharge and causing frequent twinges of sharp lancinating pain. This ulcer extends from within one-half inch of the median line of the upper lip across the cheek bone, and one and a quarter inches to the left angle of the mouth, and from the border of the mouth to within one-eighth of an inch of the left ala of the nose. You notice this little nodule or tubercle on one side, which illustrates in an excellent way the mode of growth of the epithelial cancer, or carcinoma, showing how actively proliferation goes on.

On last Wednesday I operated on an epithelial cancer of the lower lip in a young man only 35 years of age. Cancer is rare at such an early age. It does not usually attack a person under the age of 50. The treatment in this case, will be, of course, the immediate removal of the growth. The man has been put thoroughly under the influence of ether while I have been speaking to you. The disease, in this instance, does not involve the mucous membrane of the mouth or lips. In cutting, I shall go as far as possible from the limits of disease. This will be a very nasty and bloody operation, and I am much afraid that the man will be pretty thoroughly out of the influence of the ether before I get through with the cutting. I begin by making a rectangular incision down to the bone, cutting well up on the cheek between the cancer and the left ala of the nose, and prolonging the left side of the mouth. Now that I have cut out all the diseased tissue, I proceed to take up the flesh along the canine fossa of the upper jaw-bone, and well up towards the orbit, so that I may slip my flap forward sufficiently. You will always have to expect great hæmorrhage in these operations on the lower parts of the face. Before bringing the flaps together, my assistants carefully tie all these spurting arteries. The hæmorrhage is still considerable, however, for no part of the body is more vascular than the face. By loosening the right side of the upper lip and sliding it well over, you see that I have succeeded admirably in filling up the gap. There may possibly be some slight deformity of the left corner of the mouth, but that will not make much difference,

particularly in the case of a man that can let his moustache grow to cover the scar. The mouth looks a little drawn up, but nature will bring it back into shape.

**MOTHER'S MARK.**—You notice this soft, elastic tumor over the upper portion of the left frontal bone. It is as large as an almond, and is traversed by veins. When the child cries the tumor grows hard and tense. This is what is vulgarly known as a mother's mark, a *nævus materna*. These tumors are called cavernous angiomas, and consist of dilated veins, or arteries, or both—sometimes the veins predominate, sometimes the arteries. These veins and arteries are, of course, of capillary size. There are a great many ways of operating in a case like this. In a recent instance I tried to cut away the growth under the skin, so as to avoid a bad looking scar, but I found it of no use. On another occasion, I tried cauterization, heating the bulb of the cautery, and perforating the tumor in many places, but it did no real good. The proper way to treat such cases is the one I shall now adopt. I push two oiled pins right through the base of the growth so that they cross each other at right angles. I then take a sharp knife and cut a groove in the skin between the points of insertion and exit of the two pins, and then pass a stout ligature round the base of the *nævus* and underneath the pins. I draw this ligature just as tight as I possibly can, so as to completely strangle the growth. When this is done the vessels of the tumor are obliterated, new matter is thrown out, and the tumor itself sloughs off in the course of four or five days, leaving an open, granulating wound, which must be protected by some mild ointment. Before dismissing the case I cut off the end of the pins, so that they will not catch in the clothing. There is no use whatever in temporizing in these cases by the use of the cautery, or by the injection of irritating substances into the body of the tumor.

**SARCOMA OF THE CHEEK.**—This man is a farmer, 57 years of age. About one year ago he first noticed a small swelling above the canine fossa of the lower jaw bone. The spot gradually became the seat of lancinating pains. Upon questioning the

patient I found that one of his brothers died of cancer of the lower lip. In spite of this local disease, the man's general health during the past year has been excellent; he sleeps well and has a good appetite. You see this irregular, ovoid swelling, extending from the upper lip almost to the orbit, and from the left ala of the nose all the way to the anterior border of the ramus of the lower jaw. This tumor is densely hard and immovably fixed. The mouth does not seem to be involved. The palatine process of the superior maxillary and the alveolus of the jaw bone are free from disease. There is no implication of the orbit. I do not yet know the condition of the nasal bones. When a tumor begins in or over the antrum it usually attacks the jaw in all directions. A cancer of the antrum highmorianum may arise from the glands of the mucous membrane, or from the periosteum. The various tumors occur in the following order, so far as frequency is concerned, viz.: sarcomas, carcinomas, fibromas, cysts and osseous growths. This tumor feels exactly like bone, and is perfectly immovable. Upon introducing my finger into the man's mouth I find that there is no extension of the disease into that cavity. I should say that this tumor originated with the soft layer of the periosteum. It may involve the malar bone. There is evidently incipient ossification in this case. Wherever there is ossification or calcification, we call the tumor osseoid. The osseoid sarcoma is one of the most malignant of all growths. In my late investigations into the malignant tumors of the long bones, I have found that sarcoma is malignant in 75-100 of all the cases. The skin in this case was thickened and disfigured by the application of a "cancer plaster" to the spot by some quack. This of course caused sloughing. I do not find any lymphatic involvement in this case. Malignant disease may exist to a very late period in its course without lymphatic involvement. Now that the patient is thoroughly under the anæsthetic, I shall begin by making a rectangular flap (the skin of the cheek is not at all involved), carrying my knife up along the edge of the nose to a point about an inch below the inner angle of the left eye, and from there well across below the eye towards the ear. I am working my way gradually from the surface towards the antrum. Sarcoma is most common in the

young, but is met with at all ages. My first diagnosis of the case was a correct one. It is a case of osseoid sarcoma of the outer layer of the periosteum of the antrum. The bone is nowhere involved. There is some slight deviation of the septum of the nose, but that is without doubt the result of a severe fracture of that organ, which the man received some time ago. In some rare instances (I do think it is the case here), there is an extension of the disease into the bone through the Haversian canals. I am gradually getting away all the diseased tissue, by means of this chisel. The bone is altogether sound, as are also the muscles. The alveolar process above the first molar is a little soft, but the softness does not extend to any depth. As I find some difficulty in stopping the bleeding from some of the smaller arteries, particularly those issuing from the bone, I shall have to leave the wound open for a while until the flow can be stanchd. I will then bring the flaps together by twisted sutures. From present appearances, there will be very good coaptation of the parts.

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### ARTICLE III.

ABSTRACT OF A CLINICAL LECTURE IN THE MEDICAL WARDS OF THE MERCY HOSPITAL, FEB. 11, 1881, ON CASES OF ERYSIPELAS AND DIPHTHERIA. By N. S. Davis, Professor of Practical and Clinical Medicine in Chicago, Medical College.

GENTLEMEN:—The first case to which I invite your attention is the same that you examined in Ward Number 36, two weeks since. The patient is a woman, aged about 30 years, usually enjoying good health. Three days prior to your first examination she had been attacked with sporadic erysipelas of the face, commencing with general fever and a red spot on the ridge of the right side of the face near the wing of the nose.

You will remember that when you saw her, three days after the initial symptoms, the erysipelatous inflammation had extended over the whole face, except the chin, causing sufficient tumefaction to close the eyes, and give the whole face, together with the right ear, a swollen and intensely red appearance. The pulse



was 110 per minute; respiration a little accelerated; temperature 103° F.; skin dry; tongue lightly covered with a white fur; urine scanty and highly colored; bowels inactive, and stomach so irritable as to dispose her to reject both drink and medicine. I then pointed out to you the diagnostic features of the disease, its supposed dependence upon a specific organic poison, and the remedies that experience has demonstrated to be of most value in its treatment; and I call your attention to it now, solely to enable you to know the subsequent progress of the case. The patient had been admitted into the ward two days before your previous visit, and had been given tincture of chloride of iron in doses of 1.500 grams every three hours, well diluted with water, and the inflamed surface covered with cloths wet in carbolated water.

The chief object of the latter was to mitigate the unpleasant heat of the surface, outward applications exerting little or no control over the progress of the disease, while the preparation of iron given internally was relied upon to correct the morbid condition of the blood and shorten the duration of the disease. But you will remember that the patient had not been able to retain the iron in the stomach, and in consequence, I told you we would substitute in its place the sulphite or hypo-sulphite of soda, which I had found by clinical experience to have some influence over the progress of this disease. It was accordingly given in doses of 66 centigrams, dissolved in mint water, repeated every two hours. This was continued three days, during which the inflammation continued to extend, occupying the whole head, face, and neck down upon the right shoulder. Although the disease thus continued actively to spread on the surface, the swelling of the face and eye-lids had begun to diminish; the stomach was retentive; the temperature was 101° F., and the tumefaction of the new parts attacked was slight, and presented but few vesications. But she complained of feeling very weak. The interval between the doses of the sulphite of soda was lengthened to four hours, and one gram of tincture of iron, with 13 centigrams of quinine given between, with milk and beef tea for nourishment. The inflammation continued to spread superficially down the posterior surface of the body to near the hips,

where it ceased and has since rapidly disappeared, the patient being now fully convalescent. You will perceive from the history just given that in this case the duration of the disease was just two weeks, and that it extended over a greater amount of surface than usual. Yet the intensity of the symptoms was much lessened from the end of the first week to the time of their disappearance.

**DIPHTHERIA.**—The next patient to whom I call your attention is this man, who was admitted into the Hospital one week since, having commenced feeling sick two or three days previously.

At the time of admission he complained of headache and severe sore throat. His pulse was 100 per minute; temperature 102° F.; skin dry; tongue coated; the whole arch of the fauces intensely red, tumefied, with a large, irregular ulcer on each tonsil, and two or three small spots of white membranous exudation on the margin of the ulcer on the left tonsil. Two or three of the lymphatic glands on the sides of the neck below the tonsils were swollen and tender to pressure, the voice hoarse, and deglutition difficult. These symptoms seemed to indicate clearly enough a case of severe diphtheria with only slight membranous exudation, and an unusually early establishment of ulceration and general muscular weakness.

*Treatment.*—He was directed to take 1.5 grams of tincture of chloride of iron well diluted with sweetened water every two hours for twenty-four hours, and then every three hours thereafter, and to gargle the throat every three hours with a solution of benzoate of soda (8 grams to 200 grams of water). He was also directed to take 13 centigrams of sulph. quinine three times a day, and milk, with farinaceous articles for nourishment. This treatment was continued without change until yesterday, when finding the patient still having a moderate general fever, with continuous severe headache, and only a slow improvement in the appearance of the throat, the iron and quinine were omitted, under the impression that they might be increasing the headache, and in their place was ordered 66 centigrams of bromide with 33 centigrams of iodide of potassium every four hours. To-day he has less headache and some less fever; yet if

you examine his throat you will see that the uvula and whole arch of the fauces, with the tonsils, are still red and tumefied, with large, irregular ulcers on the face of each tonsil, but no white membranous exudation and no fœtid odor. The hoarseness and difficulty of swallowing are less than when first admitted, and the ulcers on the tonsils not so deep, but one or two glands on each side of the neck, beneath the angle of the jaw, are still slightly swollen. (The patient being placed in an easy position, with a favorable light, all the members of the Clinical class present were enabled to make personal examination of the throat.)

It is hardly necessary to remind you that cases of disease included under the name of diphtheria differ widely from each other in their degree of severity and in some of their more prominent symptoms. Some practitioners have fallen into the habit of calling almost every case of simple catarrhal inflammation of the fauces and tonsils, diphtheria. Others call no case diphtheria, unless it presents well marked membranous exudation on some part of the inflamed surface. The latter is, of course, much more nearly correct; and yet in almost all seasons, when diphtheria is prevailing with more than ordinary severity, a few cases will be met with characterized by the usual general febrile condition, a rapidly developed dark red and much tumefied condition of the fauces and tonsils, painful deglutition, and slight enlargement of some of the lymphatic glands below the angle of the jaw; but without any perceptible white exudation, or if any, it is in very small spots and soon disappears. By the second or third day, however, ulcerations commence on the tonsils, and often extend rapidly in circumference and depth, with corresponding increase in the gravity of the general symptoms, until the condition of the patient becomes critical. It is only yesterday that I saw a case of this kind in consultation with Dr. T. A. Lilley, in the southwest part of the city. The patient was a boy, about seven years of age, who had been sick eight days, the throat was extensively ulcerated; the margins of the ulcers dark red; the voice husky; deglutition difficult; a brownish, sanious discharge from the nostrils; pulse quick, soft and weak; expression dull and typhoid, with the mind wandering or delirious a

part of the time; yet no diphtheritic or white exudation had been seen on the inflamed surface of the throat at any stage in the progress of the case.

In two cases belonging to this class, one a child, the other an adult, coming under my care, both tonsils were attacked with gangrene, accompanied by rapid prostration, and yet both ultimately recovered.

The case before us undoubtedly belongs to this class, the ulceration having commenced very early, preceded by only a very slight exudation.

Regarding diphtheria in all its grades of severity as a general disease, caused by some specific influence or agent capable of disturbing the general properties of the tissues, altering the quality of the blood, and secondarily determining a specific inflammation of the fauces and glands of the neck, it has appeared to me of great practical importance to adopt such measures as were designed to counteract these effects at the earliest possible moment. As a general rule, the grade of morbid action induced, both general and local, is asthenic or depressing, as indicated by general impairment of tonicity and local ulcerations, followed, in the convalescence, by anæmia, muscular weakness, and sometimes paralysis. Consequently the treatment should be mainly antiseptic, corrective and tonic. As far as possible the patient should be supplied with an abundance of fresh, pure air, not overheated, but comfortable in temperature, and simple, easily assimilable food or nourishment, throughout the whole course of the disease, and until health is fully restored. Entire rest, mental and physical, should be enjoined during the progress of the disease, and over-exertion should be carefully avoided until the period of convalescence has fully passed by. In the first stage, which usually lasts from four to five days, I have found no remedies more beneficial than a combination of chlorate of potash, hydrochloric acid and belladonna, as in the following formulæ:

℞ Potass. chlor.....	10 grams.
Acid hydrochl.....	3 "
Belladonnæ tinct.....	8 "
Syrup. simpl. ....	20 "
Aquæ.....	115 "

Mix. Take one teaspoonful every two, three or four hours,

according to the severity of the symptoms, for adults; and proportionately less, according to age, for children. In the milder class of cases this is all the medicine necessary during the first three or four days, unless the bowels should need moving, by a mild laxative or an enema. But in cases of medium or greater severity, I give, in addition, the benzoate of soda, dissolved in water, in the proportion of 10 grams of the first to 120 grams of the latter, of which an adult may take one teaspoonful between each of the doses of the chlorate solution, and children less in proportion. In cases of decided severity, in which the diphtheritic coating is accumulating rapidly, with corresponding increase of the glandular swellings in the neck, the application of dilute lactic acid in the form of spray to the fauces every three or four hours, and the application externally over the swollen glands, of a liniment containing chloroform, olive oil and oil of turpentine, will aid materially in checking the progress of the disease. In using the spray I put from three to five minims of the concentrated lactic acid to the ounce or 30 grams of water. The liniment consists of:

℞ Ol. oliv.....	100	grams.
Ol. terebinth.....	15	"
Chloroform.....	15	"

Mix. Shake up at time of application. When the first stage has passed, as indicated by commencing disintegration of the membranous exudation, and perhaps ulceration, more abundant and offensive secretion, and weaker pulse, the use of the benzoate soda should be omitted or restricted to merely local use as a gargle, and proper doses of the tincture of chloride of iron and quinine substituted in its place. The regular administration of nourishment, consisting of milk, thin wheat-flour and milk gruel, beef tea, mutton broth, etc., should be more persistently attended to. In very bad cases, where enough of such nourishment cannot be swallowed to sustain the patient, the rectum should be made available by using nutritive enemas, and in the same cases much advantage can be obtained by applying cod-liver oil, holding in suspension a little quinine, over a large part of the cutaneous surface every four to six hours. During the last year I have seen two children in consultation, whose recovery appeared to be

owing entirely to these latter means of support, for neither of them were able to take an ounce of anything by the stomach for more than a week. In the advanced stage of some cases accompanied by great nervous and vascular weakness, small doses of strychnine with nitric acid I have found more efficient than quinine. During the middle and latter stages of the disease I seldom make any local applications to the throat, except what the patient necessarily makes by swallowing in a dilute form such internal remedies as the tincture of chloride of iron, quinine and mineral acids. I do not believe that the disease originates locally from germs impinging on the mucous membrane of the the fauces and exciting inflammation, from whence the blood and system become inoculated, simply because in all the cases I have seen, symptoms of general disturbance have preceded the local appearances. After having tried, or seen tried by others, during a long series of years, almost every variety of treatment that has been suggested for the management of diphtheria, I am satisfied that a judicious use of the remedies just detailed to you, carefully adjusting each to the stage of the disease and condition of the patient, will result in more recoveries, and be followed by a less number of unpleasant sequelæ, than that of any other class of remedies. Even when the diphtheritic inflammation develops in the larynx, constituting diphtheritic croup, I have found more benefit from the frequent use of the lactic acid spray, one or two prompt emetics of the sub-sulphate of mercury in the beginning, and subsequently giving moderate doses of a solution of lactate of iron every one, two or three hours, according to the urgency of the symptoms, than from any other medical treatment. In these cases surgical treatment by tracheotomy may be available in some cases. In one of the cases I have alluded to, in which, instead of white exudation, gangrene showed itself almost from the beginning of the attack, accompanied by a weak and frequent pulse, much difficulty of deglutition, and general feeling of prostration, I prescribed at once salicylic acid and bicarbonate of soda dissolved in tincture of cinchona, to be given in doses of a teaspoonful, diluted with a tablespoonful of water, every two hours. The patient was a young man, and his progress was



much more favorable than I had anticipated. The gangrene speedily ceased spreading, the sloughs separated in three or four days, and the resulting ulcers healed so rapidly that the patient was fairly convalescent in two weeks.

But the clinic hour having expired, I must not detain you longer at this time.

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**THE NICTITATING MEMBRANE IN MAN.**—Dr. John Dell'Orto read before the New Orleans Medical and Surgical Association, October 9, 1880, the following:

I am glad that this subject offers me the opportunity to speak now of another peculiarity—this is a physiological one—that has been lately discovered on two negro women by Doctor Giacomini, the actual professor of anatomy of the University of Turin (Italy.)

At one of the meetings of the Academy of Medicine, of last year, he said that at the autopsy performed on these two persons (who were mother and daughter) he found in the semilunar folds of the conjunctiva, or third eye-lids, the same cartilage, common to birds and some small mammifera. It has been generally admitted, that this cartilage does not exist in apes and man, in whom the semi-lunar is constituted by a folding of the conjunctiva with the interposition of a composed connective tissue. But during the last few years Professor Giacomini had the occasion to observe with the microscope transversal sections of the semi-lunar folds of the eyes of one *ourang*—of two *cercopiteci* and of one *cinocephalus*—and he found in every one the same small quadrilateral cartilage that he found in these two women. These facts induced him to investigate on white people—in 320 eyes, from 160 white persons, he found the cartilage only in one instance.—*New Orleans Surgical and Medical Journal*, Dec., 1880.

## Original Communications.

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### ARTICLE IV.

CHLORAL HYDRATE. By H. H. KANE, M.D., New York.

*Chloral Hydrate in the Treatment of Tetanus.*—At the time when chloral hydrate was first introduced to the profession, and when it was being set forth as a cure-all for every known disease, it was tried in tetanus, and succeeded in effecting a cure in five cases in the hands of Verneuil,\* and in other cases in the hands of other men. There were those then who, not content to give the drug a fair trial, prematurely proclaimed it as a specific for this affection. There are those at the present day who look upon it in the same light. That chloral is one of the most efficient drugs ever used in tetanus there can be no question, but that it is the remedy of remedies, and to be used to the exclusion of all other treatment, is absurd. Like other drugs that have been used in this affection, it succeeds best in those cases where the type of the disease is sub-acute. In certain cases it is of absolutely no value; in others it has proved a failure because an insufficient quantity was given; and in still others it has seemed to aggravate and increase the spasms.†

Knecht, in two very interesting articles in *Schmidt's Jahrbucher* for 1879, collected 389 cases of tetanus, both traumatic and idiopathic, treated in different ways, and carefully tabulated and analyzed them. As a result of this analysis, he gives the following table of percentages:

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\* *Gas. des Hôpitaux*, 1874, pp. 516-519.

† H. P. Symonds (*Lancet Medical Gazette*, Feb. 21, 1880,

NO. CASES.	TREATMENT.	RECOVERED.	DIED.	MORTALITY.
58	Surgical.....	30	28	48 per cent.
51	Curare.....	26	25	49 per cent.
60	Calabar.....	33	27	45 per cent.
134	Chloral.....	79	55	41 per cent.
63	Various.....	32	31	49 per cent.

"To the 134 cases treated with chloral may yet be added twenty-three other cases in which this remedy was used in conjunction with other agents. Of these twenty-three cases, nineteen recovered and four died—the mortality of the entire number treated with chloral being thus lowered to thirty-seven per cent.

"The surgical treatment instituted in the fifty-eight cases consisted in amputations, stretching of nerves, etc."

To Knecht's statement that "to the 134 cases treated with chloral may be added twenty-three other cases in which the remedy was used in conjunction with other agents, etc., etc.," I take exception, for if we are to judge of the efficacy of chloral in this disease, we should study only those cases where chloral alone was used. Indeed, many of the cases given in Knecht's table as treated chiefly by chloral, were also treated with chloral and morphine, chloral and the bromide of potassium, chloral and chloroform, etc. In making up the table of the cases which I have collected, I have rearranged some of Knecht's cases, putting them in the second table. I have been able to collect 228 cases, treated by chloral alone, of which 134 recovered and 94 died.

TABLE I.

NAME OF REPORTER.	JOURNAL REFERENCE.	AGE AND SEX.	CAUSE.	DATE AFTER INJURY.	RESULT.	KIND.	TREATMENT.
1 Marcopoulos	L'Union, 29, 1873.	Young man	Shot in hand	15	R.	.....	Chloral.
2 Bensasson	Do 95, 1871.	M., 13.	Traumatic.	.....	R.	.....	Chloral.
3 Dorigo	Do do	M., 13.	Traumatic.	20	R.	.....	Chloral.
4 Grandisso—Silvestri.	Do do	F., 8.	Traumatic.	8	R.	.....	Chloral.
5 Schutzenberger	Do do	M., 22.	Cold.	.....	R.	.....	Chloral.
6-12 Wiederhofer	Do do	Infants.	Trismus Nascent.	.....	R.	.....	Chloral.
13 Runge.	Berlin Klin. Woch., vii, 39, 1870.	Adult.	Traumatic.	7	R.	.....	Chloral.
14 Panthel.	Deutscher Klin., 3, 1874.	M., 17.	Traumatic.	5	R.	.....	Chloral.
15 Bouchut.	Gaz. des Hôpitaux 46-47, 1873.	F., 12.	Traumatic.	21	D.	.....	Chloral.
16 Croft.	Gaz. de Paris, 51, 1871.	M., adult.	Traumatic.	12	R.	.....	Chloral.
17 Culver.	The Clinic, Aug., 1873.	M., 7.	Traumatic.	7	D.	.....	Chloral.
18 Croft.	Gaz. de Paris, 51, 1871.	M., 9.	Traumatic.	6	R.	.....	Chloral.
19 Lovegrove.	Brit. Med. Jour., Nov. 2, 1872.	M., 19.	Traumatic.	22	R.	.....	Chloral.
20 Le Fort.	Gaz. des Hôp., 62, 1870.	M., 34.	Traumatic.	8	D.	.....	Chloral.
21 Delsol.	Gaz. Hebdom. 2 S., xi, 31, 1874.	Soldier.	Traumatic (gunshot wound).	12	R.	.....	Chloral.
22 Do	Gaz. Hebdom. 2 S., xi, 31, 1874.	M., 15.	Traumatic.	15	R.	.....	Chloral.
23 Do	Gaz. Hebdom. 2 S., xi, 31, 1874.	Soldier.	Traumatic (gunshot wound).	10	D.	.....	Chloral.
24 Do	Gaz. Hebdom. 2 S., xi, 31, 1874.	M., 24.	Traumatic.	11	R.	.....	Chloral.
25 Blin.	Bull. Gén. de Thérap., 86, p. 549, June 30, 1874.	M., 22.	Traumatic.	14	D.	.....	Chloral.

26	Do	Bull. Gén. de Thérap., 86, p. 549, June 30, 1874.	Soldier	Traumatic.	18	D. Acute	Chloral.
27	Do	Bull. Gén. de Thérap., 86, p. 549, June 30, 1874.	F., adult	Traumatic.	2	D. Acute	Chloral.
28	Do	Bull. Gén. de Thérap., 86, p. 549, June 30, 1874.	Young man	Traumatic.	8	R. Acute	Chloral.
29	Bourdy	Bull. Gén. de Thérap., 86, p. 549, June 30, 1874.	M., 29	Traumatic.	3	R.	Chloral.
30	Baydon	Bull. Gén. de Thérap., 86, p. 549, June 30, 1874.	M., 13	Traumatic.	2	D.	Chloral.
31	Do	Bull. Gén. de Thérap., 86, p. 549, June 30, 1874.	F., 64	Traumatic.	7	D.	Chloral.
32	Do	Bull. Gén. de Thérap., 86, p. 549, June 30, 1874.	M., 23	Traumatic.	8	D.	Chloral.
33	Mascaro, J. B.	Gaz. de Paris, 35, 1874.	M., negro, 30.	Traumatic.	3	R.	Chloral.
34	Do	Do	F., 5	Traumatic.	7	R.	Chloral.
35	Chauvel	Record de Med. Milit., 38, xxx, p. 388, July and Aug., 1874.	M., 21	Traumatic (gunshot).	18	R.	Chloral.
36	Liégeois	Gaz. des Hôp., 62, 1871.	Young man	Traumatic (shot).	18	R.	Chloral.
37	Lavo, G.	Annal. Universal, ccxix, p. 305, fol. 72. Lancet, Mar. 30, 1872.	M., 26	Traumatic.	14	R.	Chloral and warm baths.
38	Do	Annal. Universal, ccxix, p. 305, fol. 72. Lancet, Mar. 30, 1872.	M., 42	Traumatic.	25	R.	Chloral and warm baths.
39	Do	Annal. Universal, ccxix, p. 305, fol. 72. Lancet, Mar. 30, 1872.	M., 22	Traumatic.	14	R.	Chloral and warm baths.
40	Huttenbrenner	Jahrb. für Kinderheilk., n. f. vii, 1, p. 34, 1873.	Child 13 days.	Suppuration of navel.		R.	Chloral dissolved in mother's milk.
41	Do	Jahrb. für Kinderheilk., n. t. vii, 1, p. 34, 1873.	Child 21 days.		8	R.	Chloral after 20th day.

TABLE I.—Continued.

NAME OF REPORTER.	JOURNAL REFERENCE.	AGE AND SEX.	CAUSE.	DATE AFTER INJURY.	RESULT.	KIND.	TREATMENT.
43 Huttenbrenner	Jahrb. für Kinderheilk.	Infant.....	.....	.....	D.	.....	Chloral.
48-47 Giralde	n. t. vii, 1, p. 34, 1873.	Soldiers.....	Traumatic.....	.....	D.	.....	Chloral.
48 Blot.....	Gaz. des Hôp., 62, 1871.	Soldier.....	Traumatic.....	.....	D.	.....	Chloral.
49-50 Boinet.....	Do do	Males.....	Traumatic.....	.....	R.	.....	Chloral.
51 Do.....	Do do	M.....	Traumatic.....	.....	D.	.....	Chloral.
52 Do.....	Do do	M.....	Traumatic.....	.....	D.	.....	Chloral.
53-57 Verneuil.....	Do do	Soldiers.....	Traumatic.....	.....	R.	.....	Chloral.
58 Ferrier.....	Do do	M., 61.....	Traumatic.....	9	D.	.....	Chloral.
59 Richelot.....	Do do	M.....	Traumatic.....	2	R.	.....	Chloral.
60 Do.....	Do do	M., 36.....	Traumatic.....	10	R.	.....	Chloral.
61 Baizeau.....	Do do	Soldier.....	Traumatic (shot).....	6	D.	.....	Chloral.
62 Blain.....	Do do	F.....	Traumatic.....	4	D.	.....	Chloral.
63 Do.....	Do do	M., 24.....	Traumatic.....	8	R.	.....	Chloral.
64 Guyon.....	Do do	F., 29.....	Traumatic.....	11	D.	.....	Chloral.
65 Duplay.....	Do do	M., 25.....	Traumatic.....	3	D.	.....	Chloral.
66 Coryllos (Paris).....	L'Union, 60, 1870.	.....	Traumatic.....	.....	.....	.....	Chloral.
67 Coryllos (Paris).....	Do 85, 1874.	M., 46.....	Traumatic.....	5	R.	.....	Chloral.
68 Nicholls (West Indies).....	Do 96, 1874.	F., 40.....	Traumatic.....	30	R.	.....	Chloral.
69 Nicholls (West Indies).....	Do do	M., negro, 46.....	Traumatic.....	14	R.	.....	Chloral.
70 Köhler.....	Med. Times & Gaz., May 27, 1876.	M., negro, 20.....	Traumatic.....	7	R.	.....	Chloral.
	Med. Times & Gaz., May 27, 186.....	Soldier.....	Traumatic (shot).....	8	R.	.....	Chloral.
	Deutsche Milit. Arztl. Ztschr., ii, 5, p. 267, 1873.						



71 Marin.....	Gaz. Lomb. xxxv, 7, 1875	M., 12	Traumatic.....	9	R.	Chloral.
72 Carrick.....	Tue Clinic, 13, 1874.....	M., 13	Traumatic.....	6	R.	Chloral.
73 Oré (Bordeaux).....	Gaz. de Paris, 21, 1874.....	M.	Traumatic.....	15	D.	Chloral (intravenous).
74 Cruveilhier.....	Gaz. des Hôp. 49, 1874.....	M., 33	Traumatic.....	28	D.	Chloral (intravenous).
75 Labbé.....	Gaz. de Paris, 21, 1874.....	M., 29	Gangrene.....	10	D.	Chloral (intravenous).
76 Tillaux.....	L'Union, 101, 1874.....	F., 46	Traumatic.....	8	D.	Chloral (intravenous).
77 Lannelongue.....	Gaz. des Hôp., 125, 1874.....	M., 13	Traumatic.....	8	R.	Chloral.
78 Davis, G. W.....	Letter to the author.....	Young man	.....	.....	.....	.....
79 Rafferty.....	Phila. M. & S. Reporter, 24, 1874.....	M., 40	Idiopathic (cold and wet).....	2	D.	Chloral.
80 Hansen.....	Dorp. Med. Zischr., v, 8, p. 290, 1874.....	M., 40	Idiopathic (cold and wet).....	1	R.	Chloral.
81 Wauthy.....	Jour. de Broux, Dec., 1875, p. 522.....	.....	Operation.....	11	D.	Chloral.
82 Do.....	Jour. de Broux, Dec., 1875, p. 522.....	.....	Traumatic.....	10	R.	Chloral.
83 Boucque.....	Presse Med., 1876.....	.....	Traumatic.....	16	D.	Chloral.
84 Cane, Leonard.....	Lancet, April, 1876.....	M., 28	Idiopathic.....	21	R.	Chloral.
87 Agelastos.....	Gaz. de Paris, 45, 1876.....	.....	From cold.....	.....	R.	Chloral.
88 Do.....	Do.....	.....	From cold.....	.....	R.	Chloral.
89 Tuefflard, L.....	L'Union, 151, 1876.....	.....	Traumatic.....	1	R.	Chloral.
90 Faulkner, Wm.....	Phila. M. & S. Reporter, Nov., 1876.....	.....	Traumatic.....	12	R.	Chloral.
91 Bournet.....	L'Union, 75, 1876.....	.....	From cold.....	2	R.	Chloral.
92 Sourier.....	Gaz. des Hôp., 46, 1876.....	.....	Traumatic.....	17	D.	Chloral.
93 Durand, Cesar.....	Gaz. Hebdom. Lo Spérimentale, Feb., 1876.....	.....	Traumatic.....	14	R.	Chloral.
94 Marchioneschi.....	Schweiz.Corr. Blat, vi, 17, 1876.....	M., 45	Traumatic.....	8	D.	Chloral.
95 Kocher.....	Bost. M. & S. Jour., Mar. 1877, p. 306.....	.....	Idiopathic.....	17	D.	Chloral. Refused to take after few days.
96 Dyer.....	.....	.....	Excoriation and cold	8	D.	Chloral. Tetanus nearly well. Death attributed to pneumonia, which had set in.

TABLE I.—Continued.

NAME OF REPORTER.	JOURNAL REFERENCE.	AGE AND SEX.	CAUSE.	DAYS AFTER INJURY.	RESULT.	KIND.	TREATMENT.
97 Roberts, J. B.	Am. Jour. Med. Sci., Oct., 1877.	M., 19	Traumatic (gunshot).	.....	R.	.....	Chloral.
98 Do	Am. Jour. Med. Sci., Oct., 1877.	M., 5	Burns	7	D.	Acute	Chloral.
99 Do	Am. Jour. Med. Sci., Oct., 1877.	M., 35	Traumatic	4	D.	Acute	Chloral.
100 Do	Am. Jour. Med. Sci., Oct., 1877.	M., 45	Traumatic	.....	R.	Acute	Chloral.
101 Do	Am. Jour. Med. Sci., Oct., 1877.	M., 20	Traumatic	.....	R.	Sub-acute	Chloral.
102 Cargill, J.	Lancet, Aug., 1877.	.....	Suppurative stage of variola	15	R.	Sub-acute	Chloral.
103 Do	do	.....	.....	.....	R.	Sub-acute	Chloral.
104 Beaumetz — Dujardin.	Bull. Thérap., Sep., 1877	M., 27	From cold	Same day	D.	.....	Chloral. heart.
105 Alpago—No- vello	Annal. Univ., Nov., 1877	.....	Traumatic	.....	R.	Sub-acute	Chloral.
106 Alpago—No- vello	Do do	M., adult	Traumatic	.....	R.	.....	Chloral.
107 Alpago—No- vello	Do do	M., adult	Traumatic	.....	R.	.....	Chloral.
108 Alpago—No- vello	Do do	.....	Traumatic	.....	D.	.....	Chloral.
109 Alpago—No- vello	Do do	.....	Traumatic	.....	R.	.....	Chloral.
110 Pincelli	Do do	.....	Traumatic	.....	R.	.....	Chloral.
111 Verneuil	Gaz. Hebdom., 1876.	M., 47	Frozen feet	13	D.	.....	Chloral. baths.

and warm

112	Do	Do	Do	M., 15.	Traumatic.	10	D.	Chloral.	Spasm ap- parently aggravated by chloral.
113	Fitzgibbon, H.	Dublin Jour., Mar., 1877	M., 12.	Traumatic.	5	D.	Chloral.	Chloral.	
114	Duncan, G. C.	Canada M. & S. Jour., June, 1877.		Traumatic.	8	R.	Chloral.	Chloral.	
115	Lawson, A.	Lancet, Feb. 16, 1878	M., 9.	Traumatic.	9	R.	Chloral.	Chloral.	
116	Krause, Robt.	Inaug. Dissertation, Bres- lau, 1878.	M., 40.	Frozen toes.		D.	Chloral.	Chloral.	
117	Do	Inaug. Dissertation, Bres- lau, 1878.	F., 28.	Frozen toes.		D.	Chloral.	Chloral.	
118	Medini, Luigi	Lo Sperimentale, 1878, p. 454.	M., 31.	Traumatic.	16	R.	Chloral.	Chloral.	
119	Lorenzutti, Lorenzo	Annal. Univ., Nov., 1876		From cold.	3	R.	Chloral.	Chloral.	
120	Luzzatto B.	Lo Sperimentale, 1876.	F., 30.	Traumatic.	Few days.	R.	Chloral.	Chloral.	
121	Watson, Eben	Lancet, 1870.		Traumatic.	8	D.	Chloral.	Chloral.	
122	Nankwell	Do Mar., 1878.		Traumatic.		D.	Chloral.	Chloral.	
123	Do	Do do		Traumatic.	8	D.	Chloral.	Chloral.	
124	Ribell	Annal. de Gynéc., 1875	F.	Post-partum.	63	R. Acute	Chloral (hypodermic- ally).	Chloral.	
125	Dufour	Bull. Gén. de Thérap., 1870, T. 78, p. 566.		Traumatic.	8	R.	Chloral.	Chloral.	
126	Laurens	Practitioner, 1877, p. 142	Woman	Traumatic.	8	R.	Chloral.	Chloral.	Continuous sleep for eight days.
127	Lavo, G.	Annal. Universal, Feb., 1872.		Traumatic.	25	R.	Chloral and warm baths.	Chloral and warm baths.	
128	Maxwell, Al- lison	Am. Practitioner, Jan., 1880.	M., 9.	Traumatic.	13	R. Sub-acute	Chloral.	Chloral.	
129	Johnson	Gaz. des Hôp., 1870.		Traumatic.	22	R.	Chloral.	Chloral.	
130	Johnson	Jour. Psycholog. Med., 1871.	M., 13.	Traumatic.	9	R.	Chloral.	Chloral.	
131	Pugliere	Practitioner, 1875, p. 299		Traumatic.		R. Acute	Chloral.	Chloral.	
132	Ballantyne	Lancet, 1870 (October).	M., 34.	Traumatic.	12	R. Acute	Chloral, and thorn re- moved from wound.	Chloral, and thorn re- moved from wound.	

TABLE I.—Continued.

NAME OF REPORTER.	JOURNAL REFERENCE.	AGE AND SEX.	CAUSE.	DATE AFTER INJURY.	KIND.	TREATMENT.
133 Cruveilhier ..	Le Progrès Méd., July, 1875 .....	.....	Unknown.....	.....	R. ....	Chloral.
134 Deu, A. ....	Bull. Gén. de Thérap., 1875 .....	.....	Traumatic.....	9 .....	D. ....	Chloral.
135 Lawrence, A.G.	Lancet, June, 1871.....	F. ....	Traumatic.....	1 .....	R. ....	Chloral.
136 Thompson, G.	Do April, 1871.....	M., 20 .....	Idiopathic.....	.....	R. ....	Chloral.
137 Eager.....	Do Mar., 1871.....	M., 23 .....	Traumatic.....	19 .....	D. ....	Chloral.
138 Tyrrell.....	Do May, 1871.....	M., 23 .....	Traumatic.....	7 .....	D. ....	Chloral.
139 Tait, Lawson.	Do Jan., 1871.....	M., 22 .....	Traumatic.....	6 .....	D. ....	Chloral.
140 Gay, G. W. . .	Boston M. & S. Jour., Aug., 1876.....	.....	Traumatic.....	10 .....	D. ....	Chloral.
141 Madden . . .	Dublin Jour., 1874, p. 583	F. ....	Puerperal.....	.....	R. ....	Chloral.
142 Vilaplana....	Land. Med. Record, Jan., 1877.....	.....	Traumatic.....	20 .....	R. ....	Chloral.
143 Salter, J. H. . .	Practitioner, Dec., 1876.	M., 38.....	Traumatic.....	11 .....	R. ....	Chloral (hypodermic-ally).
144 .....	Bull. Gén. de Thérap., 1870, p. 477.....	.....	Traumatic.....	.....	D. ....	Chloral.
145 .....	Bull. Gén. de Thérap., 1870, p. 477.....	.....	Traumatic.....	.....	D. ....	Chloral.
146 Monette, G. N.	Am. Jour. Med. Sci., Oct., 1875.....	F., 2 yrs.....	From vaccinat'n that progressed badly..	27 .....	R. ....	Chloral.
147 Gueniot & Gamiez .....	Med. News & Library, Nov. 1877.....	.....	Traumatic.....	.....	R. ....	Chloral.
148 Dunster, E. S. N. Y. Med. Jour., 1871, p. 748 .....	.....	.....	Not stated.....	.....	D. ....	Chloral.

149	Paget.....	N. Y. Med. Jour, 1871, p. 118.....	Not stated.....	.....	D.....	Chloral.
150	Broadbent...	N. Y. Med. Jour., 1871, p. 118.....	Idiopathic.....	.....	D.....	Chloral.
151	Nichol, W. L.	N. Y. Med. Jour., 1870, p. 455.....	M., mulatto, 14 Traumatic.	Few days.....	R.....	Chloral, after opium and bromide had failed.
152	Liebreich, O.	Berlin Klin. Woch., Oct. 24, 1870.....	Idiopathic.....	.....	R.....	Chloral.
153	Bellevue Hos- pital.....	N. Y. Med. Record, Jan., 1871.....	M., 9 Traumatic.	9.....	D. Acute.....	Chloral.
154	Bellevue Hos- pital.....	N. Y. Med. Record, Jan. 1871.....	M., 28 Traumatic.	19.....	R. Acute.....	Chloral.
155	MacDonald, A.	Edin. Med. Jour., June, 1875.....	F. Puerperal.....	.....	D. Very severe.	Chloral.
156	Knox, D. J. S.	Edin. Med. Jour., Jan., 1873.....	M., 17 Traumatic.	28.....	R.....	Chloral.
157	Laraux, Du- breil & Onimus.	Gaz. des Hôp., 68, 1870.. Do 1878, 942.	Man..... Traumatic.	17.....	R. Acute.....	Chloral and continu- ous current.
158	Stutel.....	N. Y. Med. Jour., 1870, p. 419.....	Man..... Traumatic.	15.....	R.....	Chloral.
159	Wirth, R....	.....	Man..... Traumatic.	14.....	R. Sub-acute...	Chloral, after mor- phine and opium had failed to affect
160	Watson, Spen- cer.....	Lancet, Oct., 1870.....	F., 41 Traumatic.	21.....	R. Sub-acute...	Chloral.
161	Langier (quot- ed by Labbé).	Bull. Gén. de Thérap., 1870, p. 330.....	Traumatic.....	.....	D.....	Chloral.
162	Bouchut.....	Bull. Gén. de Thérap., 1870, p. 330.....	Idiopathic.....	.....	D.....	Chloral.
163	Demarquay..	Bull. Gén. de Thérap., 1870, p. 330.....	Traumatic.....	.....	D.....	Chloral.

TABLE I.—Continued.

NAME OF REPORTER.	JOURNAL REFERENCE.	AGE AND SEX.	CAUSE.	DATE AFTER INJURY.	RESULTS.	KIND.	TREATMENT.
164 Limousin . . .	Bull. Gén. de Thérap., 1870, p. 330 . . .	..	Traumatic . . .	..	D.	..	Chloral.
165 Liebreich . . .	Bull. Gén. de Thérap., 1870, p. 330 . . .	..	Traumatic . . .	..	D.	..	Chloral.
166 Langenbeck . .	Bull. Gén. de Thérap., 1870, p. 330 . . .	..	Traumatic . . .	..	R.	..	Chloral.
167 Dufour . . . . .	Gaz. des Hôp., 65, 1870. . .	..	..	..	D.	..	Chloral.
168 Do . . . . .	Do . . . . .	..	..	..	D.	..	Chloral.
169 Do . . . . .	Do 78, p. 566, 1870. . .	Man. . . . .	Traumatic . . .	8	R.	..	Chloral.
170 Bleyne . . . . .	Lancet, July 15, 1876 . . .	M., 50. . . .	Traumatic . . .	12	R.	Acute . . .	Chloral.
171 Bigelow, H. R. .	Letter to author. . . . .	M., 36. . . .	Idiopathic . . .	..	D.	..	Chloral.
172 Johnson, Geo. .	Jour. Psycholog. Med. 1871, p. 150 . . .	..	Traumatic . . .	21	R.	..	Chloral.
173 Geens . . . . .	Jour. de Broux, Dec. 1871 . .	..	Traumatic . . .	..	R.	..	Chloral.
174 Weber, H. . . .	Med. Times & Gaz., May 11, 1872. . . . .	M., 35. . . .	Idiopathic . . .	..	R.	Sub-acute . .	Chloral, after use of morphia for two days.
175 Beck, J. R. . . .	St. Louis M. & S. Jour., June, 1872. . . . .	..	Traumatic . . .	7	R.	Acute . . .	Chloral.
176 Cluness . . . . .	Pacific M. & S. Jour., Apr., 1871. . . . .	..	Traumatic . . .	..	R.	..	Chloral.
177 Tay . . . . .	Brit. Med. Jour., Apr., 1870. . . . .	..	Traumatic . . .	..	D.	..	Chloral.
178 Peter, Preston .	Am. Practitioner, Sept., 1870. . . . .	..	..	..	R.	..	Chloral.
179 Truckwell & Winckfield. . . .	Lancet, Aug. 23, 1879 . . .	M., 25. . . .	Idiopathic. . . .	..	D.	Sub-acute . .	Chloral.



180	Peele, Edward	Dublin Jour., Apr., 1870	M., 6	Traumatic.	10	R.	Sub-acute	Chloral.
181	Macnamara	Practitioner, 1871		Traumatic.		D.		Chloral.
182	Do	Do		Traumatic.		D.		Chloral.
183	Do	Do		Traumatic.		D.		Chloral.
184	Do	Do		Traumatic.		D.		Chloral.
185	Do	Do		Traumatic.		D.		Chloral.
186	Do	Do		Traumatic.		D.		Chloral.
187	Do	Do		Traumatic.		R.		Chloral.
188	Do	Do		Idiopathic.		R.		Chloral.
189	Do	Do		Idiopathic.		R.		Chloral.
190	Do	Do		Traumatic.	11	R.		Chloral.
191	Kilpatrick	Letter to the author	M., 14	Traumatic.		R.		Chloral.
192	Garneis(Beck)	St. Louis M. & S. Jour., June, 1872		Traumatic.		R.		Chloral.
193	Do	St. Louis M. & S. Jour., June, 1872		Traumatic.		R.		Chloral.
194	Prewitt	St. Louis M. & S. Jour., Oct., 1876	M., 7	Traumatic.	7	R.		Chloral.
195	White, Isa. H.	Letter to author	M., 25	Traumatic.		R.	Acute	Chloral, after calabar bean had failed.
196	Byrce, C. A.	Do	M., 52	Traumatic.		R.	Sub-acute	Chloral and milk enema.
197	Miller, J. K.	Phila. M. & S. Reporter, Dec., 1877	M., 8	Traumatic.	5	R.		Chloral, after bella-donna and calabar bean.
198	Delmont, F.	Letter to author	M., 6	Traumatic.	10	R.	Acute	Chloral.
199	Corne, Alf.	Lancet, Oct. 30, 1875	M., 19	Poisoned arrow	6	D.	Acute	Morphia once or twice.
200	Boislivière	St. Louis M. & S. Jour., Oct., 1876	Infant	Trismus nascentium		R.		Chloral.
201	Do	Gaz. des Hôp., 1877, p. 741	Woman	After removal of breast	22	R.		Chloral.
202	Arton, J. H.	Letter to author	M., negro, 16	Traumatic.	10	R.	Sub-acute	Chloral.

TABLE I.—Continued.

NAME OF REPORTER.	JOURNAL REFERENCE.	AGE AND SEX.	CAUSE.	DATE AFTER INJURY.	RESULT.	KIND.	TREATMENT.
203 Arton, J. H.	Letter to author.....	M., 10 .....	Traumatic.....	10	D.	Acute .....	Chloral. Seen only 86 hours before death. Had previously been treated by valerian.
204 Do	Do .....	M., 12 .....	Traumatic.....	10	D.	Acute .....	Chloral.
205 Roof, Stephen	Bull. Gén. de Thérap., vol. 86, p. 422.....	F., 9 days .....	Trismus nascentium.....		D.		Chloral.
206 Chauvel.....	Bull. Gén. de Thérap., vol. 86, p. 422.....				D.		Chloral.
207 Do .....	Gaz. Med. Italiano, prov. Venetia, Dec. 25, 1875.				D.		Chloral.
208 Rasia, Dom.	San Buenaventura, Cal. By letter to author.....		Traumatic.....		R.		Chloral.
209 F. Delmont.	El Genio Medico Quirurgico, Sept. 15, 1875....		Traumatic.....		R.		Chloral.
210 Linde, G. de la	El Genio Medico Quirurgico, Sept. 15, 1875....		Traumatic.....		R.		Chloral.
211 Do	Gaz. des Hôpitaux, 1876, p. 211.....		Traumatic.....		R.		Chloral.
212 Tillaux.....	Personal communication	M., 17 .....	Trismus nascentium.....		D.		Chloral.
213 P. Kretschmar	Do do	Infant .....			R.		Chloral.
214 Do	Letter to the author.....				D.		Chloral.
215 H. W. Boyd (Chicago, Ill.)	Taylor, Guy's Hosp. Reports, 1878, p. 339....				D.		Chloral.
216 Mr. Birkett.	Taylor, Guy's Hosp. Reports, 1878, p. 339....	M., 21 .....	Traumatic.....	1	R.	Chronic .....	Chloral.
217 Mr. Hilton...		M. ....	Traumatic.....	11	D.		Chloral

218 Dr. Moxon...	Taylor, Guy's Hosp. Re- ports, 1878, p. 349....	F., 43.....	Idiopathic.....	.....	D.....	.....	Chloral; ten drachms in five days.
219 Dr. Forster..	Taylor, Guy's Hosp. Re- ports, 1878, p. 339....	M., 16.....	Traumatic.....	21.....	D.....	Chloral.	Chloral.
220 Do ..	Taylor, Guy's Hosp. Re- ports, 1878, p. 339....	M.....	Traumatic.....	9.....	D.....	Chloral.	Chloral.
221 Mr. Bryant..	Taylor, Guy's Hosp. Re- ports, 1878, p. 339....	M., 43.....	Traumatic.....	14.....	D.....	Chloral and trache- otomy.	Chloral and trache- otomy.
222 Mr. Forster..	Taylor, Guy's Hosp. Re- ports, 1878, p. 336....	M., 28.....	Traumatic.....	13.....	D.....	Chloral. (Autopsy showed purulent mucus in bronchi.)	Chloral. (Autopsy showed purulent mucus in bronchi.)
223 Dr. Wilks...	Taylor, Guy's Hosp. Re- ports, 1878, p. 336....	F., 35.....	Idiopathic.....	1.....	D.....	Chloral. (sweat.)	Chloral.
224 Mr. Durham.	Taylor, Guy's Hosp. Re- ports, 1878, p. 339....	F., 14.....	Traumatic.....	9.....	D.....	Chloral.	Chloral.
225 A. Maxwell, (Indianapolis)	Letter to the author....	.....	Traumatic.....	.....	R. Acute.....	Chloral.	Chloral.
226 R.L. Pinching (San Francisco)	Do do .....	.....	.....	.....	D.....	Chloral.	Chloral.
227 R.L. Pinching (San Francisco)	Do do .....	.....	.....	.....	D.....	Chloral.	Chloral.
228 L. C. Herrick (Woodstock, O.)	Do do .....	.....	.....	.....	R.....	Chloral.	Chloral.

Total cases ...228	{	Males .....	119	{	Traumatic.....	103	{	
					Idiopathic .....	10		
		Females.....	22		Traumatic.....	17		
					Idiopathic .....	2		
Total cases ....228	{	Not stated and	87	{	Puerperal .....	3	{	21
		infants .....			Tetanus, infant...	12		
			228					
Total cases ....228	{	Traumatic .....	175	{	Males .....	103	{	175
					Females....	17		
					Not stated..	108		
Total cases ....228	{	Idiopathic .....	21	{	Males .....	10	{	21
					Females....	2		
					Not stated..	9		
		Infantile tetanus..	12					
		Puerperal tetanus	3					
			211					
		Not stated.....	17					
			228					
Recoveries ...134								
Deaths ..... 94	{	Males .....	45	{	Traumatic. 41	{	45	
					Idiopathic..			4
		Females.....	11		Traumatic. 8			
					Idiopathic. 2			
Deaths ..... 94	{	Infants .....	3	{	Puerperal..	{	11	
		Not stated.....	35					
			94					

In the second table, which I here give, various remedies were used, chloral, however, always entering into and playing a prominent part in the treatment. There are 98 cases in all, with 64 recoveries and 34 deaths, really a better showing than is to be had in those cases where chloral alone was used.

From the facts shown in Table II it can be plainly seen that success under the chloral treatment alone is not so great as that under a mixed treatment into which chloral largely enters, and consequently that this drug is by no means a specific in this disease; that males are more likely to be attacked than females,

and that of the females so affected a larger percentage than of the males die.

It is a noticeable fact, also, that the cases of tetanus occurring in hospital yield a very large percentage of deaths under any form of treatment. I am of the opinion that this is due to three things: 1st. That hospital patients are, as a rule, but poorly nourished. 2d. That these cases are usually of the acute type. 3d. That in many instances they are not brought into a hospital until the disease has been under way for from one to four days.

Tetanus, during war, has always yielded a very large percentage of deaths. McLeod,\* "Notes on the Surgery of the War in Crimea," relates twenty-three cases, in which there were but two recoveries; and Demme\* states that eighty-six cases treated in the Italian hospitals during the war of 1859 yielded but six recoveries. These were of course not treated by chloral.

Dr. O'Beirne\* (Dublin Hospital Reports) gives 200 cases with no recoveries.

Some of the cases of tetanus occurring in both hospital and private practice, but especially the latter, are undoubtedly hysterical and would recover, sooner or later, under any plan of treatment. Dr. D. Webster Prentiss† gives the following rules for distinguishing true from hysterical tetanus.

In a case reported of the latter condition, he states that the points in the case marking it as hysterical were—

1. It was ushered in by noise in the ears, deafness and blindness.

In true tetanus and strychnia poisoning the senses are rendered preternaturally acute.

2. There was unconsciousness during the paroxysms.

This never occurs in tetanus and strychnia poisoning, except as an ante-mortem condition.

3. The eyes were closed during the spasms. The eyes stare widely open in the other diseases.

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\* Quoted by E. C. Mann, N. Y. Med. Record, Jan. 16, 1875.

† Braithwaite's Quarterly Epitome, March, 1880.

TABLE II.

NAME OF REPORTER.	JOURNAL REFERENCE.	AGE AND SEX.	CAUSE.	DATE AFTER INJURY.	RESULT.	KIND.	TREATMENT.
1 Upshur, J. N.	Virginia Med. Monthly, May, 1880.	M. (negro) 4.	Idiopathic.	.....	D.	.....	Chloral and bromides.
2 Do.	Virginia Med. Monthly, May, 1880.	.....	Traumatic.	17	R.	.....	Chloral, bromides and morphia.
3 Spence.	Lancet, April, 1876.	M., 5.	Traumatic.	30	R.	.....	Chloral, potass. bromid., atropia and amputation of leg.
4 Groneman.	Lancet, Feb., 1871.	M., 44.	Traumatic.	.....	R.	.....	Chloral and morphine.
5 Gay, G. W.	Boston M. & S. Journal, Oct., 1877.	F., 21.	Traumatic.	24	R.	.....	Chloral and potass. bromid.
6 Griffin, H.	Practitioner, Feb., 1872.	F., 21.	Traumatic.	22	R.	.....	Chloral, morphine and galvanism.
7 Boyd, M. A.	Dublin Jour., 1874, p. 583.	F., adult.	Puerperal.	6	D.	.....	Chloral and chloroform.
8 Denton.	Practitioner, 1870, p. 370.	Boy.	Traumatic.	.....	R.	.....	Chloral and other drugs.
9 Salisbury.	Chicago Med. Journal, Dec., 1879.	M., 16.	Traumatic.	10	R.	.....	Chloral, potass. bromid., and towards the last, calabar bean.
10 Do.	Chicago Med. Journal, Dec., 1879.	M., .....	Traumatic.	6	D.	.....	Chloral, potass. bromid., and towards the last, calabar bean.
11 Watson, P. E.	Lancet, Feb., 16, 1878.	F., adult.	Idiopathic.	10	R.	.....	Chloral and atropia hypodermically.
12 Cushing, C.	Pacific M. & S. Journal, March, 1873.	M., 5.	Traumatic.	14	R.	Mild.	Chloral and calabar bean.
13 Shelley, A. W.	N. Y. Med. Jour., 1873, p. 262.	F., 39.	Traumatic.	14	R.	.....	Chloral and morphia.
14 Maxwell, A.	Am. Practitioner, Jan., 1880.	.....	Traumatic.	.....	R.	Acute.	Chloral, morphia and atropia.
15 Leeds, O. H.	N. Y. Med. Jour., 1875, p. 393.	F., 14.	Traumatic.	15	R.	.....	Chloral and potass. bromid.
16 Do.	N. Y. Med. Jour., 1875, p. 393.	F., 28.	Traumatic.	10	R.	S. A.	Chloral and potass. bromid.

17	.....	Annal. Universal; N. Y. Med. Jour., Vol. 25, p. 234.	.....	Traumatic.....	.....	R.	.....	Chloral and jaborandi.
18	Ogle.....	N. Y. Med. Jour., 1871, p. 117	Boy.....	Traumatic.....	3	R.	.....	Chloral, belladonna and ice to spine.
19	Curran, J. W. ....	Med. Press & Circular, Oct., 1870	M., 25	Traumatic.....	14	R.	.....	Chloral and belladonna.
20	Molliere.....	Gaz. des Hôp., 1879	M., 25	Traumatic.....	10	D.	.....	Symptoms caused after amputation, Chloral, bromide potass., morphia.
21	Royds, Wm. ....	Lancet, Dec., 1870	M., 25	Traumatic.....	.....	D.	.....	Chloral and ice to spine. Death from hemorrhage from wound from tetanus.
22	Do.....	Do do	M., 13	Traumatic.....	.....	R.	.....	Chloral, chloroform and physostigma.
23	Bryant, Thos. ....	Do Nov. 2, 1872	M., 19	Traumatic.....	19	R.	.....	Chloral; then chloral and morphia.
24	Martyn.....	Do Nov. 21, 1874	M., 15	Not decided....	.....	D.	.....	Chloral, potass. bromid. and ice to spine.
25	Hornby.....	Do Oct. 19, 1872	M., 32	Traumatic.....	3	D.	.....	Chloral, morphia and ice to spine.
26	Do.....	Do do	M., 40	Traumatic.....	Fri.	R.	.....	Chloral and nicotine.
27	Duncan, A. E. ....	Cincinnati Med. News.	F., 19	Traumatic.....	1	R.	.....	Chloral, chloroform during spasms.
28	Hunter, G. G. ....	Lancet, Feb. 6, 1875	M., 13	Traumatic.....	10	R.	.....	Potass. bromid, cannabis indica and small amt. chloroform. Chloral only as an hypnotic.
29	Hamilton, J. B. ....	Do Jan. 16, 1875	M., 25	Traumatic.....	14	D.	.....	Chloral and cannabis indica.
30	Smith, Spencer ..	Do May 22, 1875	M., 27	Traumatic.....	15	R.	S. A.	Chloral and potass. bromid.
31	Shinkwin, T. C. ....	Dublin Jour., Aug., 1875	Young men	Traumatic.....	13	R.	.....	Chloral (most benefit from) and calabar bean.
32	Southey.....	Lancet, Oct. 16, 1875	M., 20	Idiopathic.....	2	R.	.....	Chloral, finally abandoned for potass. bromid and conium.
33	Mackay, W. B. ....	Brit. Med. Jour., 1880	M., 24	T. (?).....	14	R.	.....	Chloral and belladonna.
34	.....	Hospital Gazette	.....	.....	.....	R.	.....	Chloral and potass. bromide (enemata).
35	Roberts, H. P. ....	Lancet, May 20, 1876	.....	Traumatic.....	4	D.	.....	Chloral (of no service), chloroform and morphia.
36	Do.....	Do do	.....	Traumatic.....	8	D.	.....	Chloral, chloroform and morphia.



TABLE II.—Continued.

NAME OF REPORTER.	JOURNAL REFERENCE.	AGE AND SEX.	CAUSE.	DATE AFTER INJURY.	RESULT.	KIND.	TREATMENT.
37 Baker .....	Lancet, April 15, 1876 ..	M., 29 .....	Traumatic....	13 .....	D. ....	.....	Potass. bromid, morphia and hyoscyamin first 3 days. Then chloral. Nerve was decided also.
38 Do.....	Do do .....	F., 29 .....	Traumatic....	11 .....	D. ....	.....	Chloral and chloroform. Finger amputated.
39 Benton, Sam'l. ....	Lancet, Nov. 11, 1876 ..	M., 31 .....	Idiopathic....	.....	D. ....	.....	Chloral, morphia and potass. bromid.
40 Do.....	Do March 24, 1874. ....	.....	Traumatic....	.....	R. ....	.....	Chloral, potass. bromid and tr. opti.
41 Boon, A. T. ....	Do July 28, 1877. ....	.....	Idiopathic....	9 .....	R. ....	S. A. ....	Chloral and calabar bean.
42 Duncan, T. G. ....	Am. Prac., Aug., 1870. ....	.....	Idiopathic....	.....	R. ....	.....	Chloral and calabar bean.
43 Kirchoff.....	Berlin Klin. Woch., 1879, No. 25.....	F., 52 .....	Traumatic....	6 .....	D. ....	.....	Chloral and potass. bromid in large doses. Thorn removed.
44 Kinsman, D. N. ....	(Letter to the Author) ..	F., 12 .....	Traumatic....	3 .....	D. ....	Acute. ....	Chloral alone at first. Subsequently morphia, atropia, calabar bean and chloroform.
45 Easley, E. T. ....	Do do .....	M., 19 .....	Traumatic....	11 .....	R. ....	Acute. ....	Chloral, morphia hypodermically.
46 Do.....	Do do .....	M., 14 .....	Traumatic....	7 .....	R. ....	S. A. ....	Chloral, morphia hypodermically.
47 Squier, Jno. B. ....	Do do .....	M., 60 .....	Traumatic....	10 .....	D. ....	A. ....	Aconite, chloral and morphia.
48 Laveran .....	Archiv. de Physiol., Oct., 1877 .....	M., 11½ .....	Traumatic....	12 .....	D. ....	.....	Chloral and morphia.
49 Rizzoli.....	L' Union, 1873, p. 247. ....	M., 19 .....	Traumatic....	9 .....	R. ....	.....	Chloral, excision of nerve, and morphine injections.
50 Kreischy .....	Wien. Med. Woch., 1876. ....	M., 15 .....	Traumatic....	16 .....	R. ....	.....	Chloral and amputation of finger.
51 Verneuil.....	Gaz. des Hôp., 1874, p. 94-97.....	F., adult. ....	Traumatic ....	5 .....	D. ....	Acute. ....	Chloral and morphia.
52 Gatti.....	L' Indépendente, Sept., 1873 .....	M., 40 .....	Traumatic....	6 .....	R. ....	.....	Chloral, bleeding and curare.
53 Otto (Dorpat) ..	Med. Zeitschrift, 1873, p. 188.. ..	.....	Cold and wet. ....	13 .....	R. ....	.....	Curare, chloral, and then curare again.

54	Do. ....	Med. Zeitschrift, 1872, 1881	M., 24.	Traumatic ...	15	D. ....	Chloral, morphia, curare.
55	Sanni, Carlo. . .	II. Raccogliatore Med., Nov. 1873. ....	F., 43.	Dog bite. ....	15	R. ....	Chloral, morphia, curare.
56	Ghio, Ant. ....	Gaz. Lomb. xxxiv. 30, 74	M., 16.	Traumatic. ....	17	R. ....	Chloral, curare, warm baths.
57	Kennedy, S. ....	Phila. M. & S. Reporter, Feb. 1873. ....	M., 52.	Traumatic. ....	11	D. ....	Chloral and calabar.
58	Bennett, W. H. .	Phila. Med. Times, Dec., 1871. ....	M., 18.	Traumatic. ....	7	D. ....	Chloral, calabar bean, chloroform.
59	McEwan, J. ....	Glasgow Jour., Oct., 1874	M., 10.	Traumatic. ....	21	D. ....	Chloral, calabar bean, ice, chloroform.
60	Porter. ....	Am. Jour. Med. Science, July, 1876. ....		Traumatic. ....	13	R. ....	Chloral and potass. bromid.
61	Wood, H. C. ....	Phila. M. & S. Reporter, Oct., 1877. ....				R. ....	Chloral and bromide in large doses.
62	Blachez. ....	Gaz. Hebdom. 1878. ....	M.,	Cold and wet. ....	1	R. ....	Blister to neck.
63	Evans, H. G. ....	Phila. Med. Times, May, 1878. ....	M.,	Wet. ....	1	R. ....	Chloral, bromide potass. and baths.
64	Pantel. ....	Berlin, Klin. Woch., '78.		Traumatic. ....	11	R. ....	Chloral, bromide potass. and baths.
65	Heath. ....	Lancet, March 23, 1878.	M., 45	Traumatic. ....	5	R. ....	Chloral, bromide. Later, chloral.
66	Carruthers, J. B.	Edinboro Med. Journal, March, 1877. ....	M., 14.	Traumatic. ....	14	R. ....	Chloral, bromide. Later, chloral.
67	Tuxford, Arth. .	Schmidt's Jahrbücher, 171, p. 239. ....			13	R. Acute.	Chloral, bromide. Later, chloral.
68	Samuels. ....	Lancet, Feb. 16, 1878.		Wasp stings. ....	3	R. ....	Chloral, bromide. Later, chloral.
69	Krause, R. ....	Inaug. Dissert., Breslau, 1878. ....	M., 17.	Traumatic. ....	7	R. ....	Chloral, bromide.
70	Ferrini, Giov. .	Gaz. de Paris, 1876. ....	F., 21	Traumatic. ....	14	R. ....	Chl'l, potass. brom., morph. & curare.
71	Do. ....	Gaz. Lombardi, 1877.	M. (negro)	Traumatic. ....	5	R. ....	Chloral and jaborandi.
72	Bannister H.M.	Quoted by Kerech. ....	M., 24.	Wet & wound. ....	2	R. ....	Chloral and jaborandi.
73	Dawson, B. ....	Am. Jour. Obstet., April, 1876. ....	F.,	Traumatic. ....	13	D. ....	Chloral and other remedies.
74	Foster. ....	Lancet, April, 1871. ....	M., 40.	After operation	9	D. ....	Chloral subcutaneously, calabar bean.
75	Dawson, W. W. .	The Clinic, July, 1876.		Traumatic. ....	16	R. ....	Chloral and amyl.
76	Calastri. ....	Gaz. Lombardi. ....	M., 17.	Traumatic. ....	16	R. ....	Chloral, cal. bean, morphine and opium
77	.....	Pacific M. & S. Journal, Lancet, March 24, 1874.	M., 9.	Traumatic. ....	19	R. ....	Chloral, chloroform, opium, extension.
						R. ....	Chloral, tr. opii., potass. bromid. and ice to spine.

TABLE II.—Continued.

NAME OF REPORTER.	JOURNAL REFERENCES.	AGE AND SEX.	CAUSE.	KIND.	RESULT.	DATE AFTER INJURY.	TREATMENT.
78 Drake.....	Practitioner, 1877, p. 52...	M., 28.....	Traumatic....	13	D.	.....	Chloral and cal. bean; nerve stretching.
79 Gay, G. W....	Boston M. & S. Journal, Aug. 1876.....	M., 54.....	Traumatic....	10	D.	.....	Chloral and potass. bromide.
80 Bresson.....	Practitioner, 1877, p. 142	Man.....	From burns...	8	D.	.....	Chloral, morphia, calomel and hot baths. Died from laryngeal spasm from cold air after a hot bath.
81 Verneuil.....	Gaz. des Hôp., No. 43, '70	Man.....	Traumatic....	8	R.	.....	Chloral and morphia.
82 Do.....	Do do	M., 20.....	Traumatic....	15	D.	.....	Chloral, morphia, potass. bromid.
83 Haynes, W. H. (Letter to the Author)...	Do do	Infant, 9 days.	T.N. Nascitum....	.....	D.	.....	Chloral and potass. bromid.
84 Parrish, Jos....	Do do	M., 9.....	Traumatic....	10	R.	.....	Chloral, potass. bromid., morphia; then after two weeks, morphia alone.
85 Johnson.....	Med. Times & Gazette, June, 1875.....	M., 28.....	Traumatic....	8	D.	Acute.	Chloral and calabar bean.
86 Imray.....	Med. Times & Gaz., May 27, 1876.....	M. (negro), 47.	Traumatic....	13	R.	.....	Chloral and opium.
87 Boon, A. P....	Lancet, Feb. 16, 1878.....	M., 10.....	Traumatic....	36 hrs.	D.	.....	Chloral and cannabis indica.
88 Do.....	Do do	M., 18.....	Traumatic....	48 hrs.	R.	.....	Chloral and cannabis indica.
89 Do.....	Do do	M., 50.....	Traumatic....	6	R.	.....	Chloral and cannabis indica.
90 Do.....	Do do	M., 10.....	Idiopathic....	.....	R.	.....	Chloral and cannabis indica.
91 Do.....	Do do	M., 14.....	Idiopathic....	.....	R.	.....	Chloral and cannabis indica.
92 Davis, F. H....	Do March 23, 1878..	F., 10.....	Idiopathic....	10	D.	.....	Chloral, chloroform, morphia. Chloral seemed to give most relief.
93 Barruch, S....	(Letter to the Author)...	M. (negro) ad'lt.	.....	.....	R.	.....	Chloral and potass. bromid.
94 Mr. Cook. ....	Taylor, Guy's Hosp. Reports, 1878, p. 339....	M., 23.....	Traumatic....	7	D.	Acute.	Chloral and morphia.
95 Dr. Fagge.....	Taylor, Guy's Hosp. Reports, 1878, p. 339....	M., 20.....	Traumatic....	5	R.	Chr.	Chloral and potass. iodid.
96 Drs. Davies & Colley.....	Taylor, Guy's Hosp. Reports, 1878, p. 339....	M., 13.....	Traumatic....	5	D.	Acute.	Chloral, opium and potass. bromide.

Total cases, 96	{	Recovered.....63	{	Males.....23
		Died.....33		Females.....7
Died.....	{	Traumatic.....28	{	Infants.....1
		Idiopathic.....3		
		Tris. Nasc.....1		
		Puerperal.....1		
		Total.....33		

## MIXED TREATMENT.

REMEDIES USED.	RECOVERIES.	DEATHS.	TOTAL.
Chloral and potass. bromid.....	16	5	21
Chloral, potass. bromide and calabar bean..	1	1	2
Chloral, potass. bromid. and morphine.....	4*	4	8
Chloral, potass. bromid., morph. and woorara	1	0	1
Chloral, potass. bromid, morph. and atropia.	1*	0	1
Chloral, potass. bromid. and chloroform....	2	0	2
Chloral and physostigma.....	4	5	9
Chloral, physostigma and morphine.....	1	0	1
Chloral, physostigma and chloroform.....	1	2	3
Chloral, curare and morphine.....	1	1	2
Chloral and curare .....	2	0	2
Chloral, curare and bleeding.....	1	0	1
Chloral, chloroform and morphine.....	1	3	4
Chloral and chloroform.....	0	2*	2
Chloral and atropia.....	3	1	4
Chloral, atropia and morphine.....	0	1	1
Chloral and morphine.....	9*	5	14
Chloral, aconite and morphine.....	1	0	1
Chloral and amyl.....	1	0	1
Chloral and jaborandi.....	3	0	3
Chloral and nicotine.....	1	0	1
Chloral and cannabis indica.....	5	1	6

\* In one case there was surgical interference. In some of these cases marked "morphine" opium was used; and in some marked "atropia," belladonna was employed.

4. The long uninterrupted sleep at night. In this particular there is a resemblance to chorea. In true tetanus there is no such relief until convalescence. It is noticeable also that no such relief followed the administration of chloral until it was given in thirty-grain doses.

Dr. D. W. Yandell (American Practitioner)\* comes to the following conclusions from a study of 400 cases:

1. Tetanus occurs in males in proportion of four to one, and tends to recovery oftenest in females.
2. Most fatal in persons under 10 years of age—least fatal between 10 and 20 years.
3. Traumatic tetanus usual from four to nine days after injury, and these cases represent the largest mortality.
4. Recovery usual when disease appears after the ninth day.
5. When symptoms last fourteen days, recovery the rule, death the exception, *apparently independent of treatment*.
6. Tetanus appearing in puerperal state is most fatal.
7. Chloroform up to this time has yielded the largest percentage of cures.

With reference to the second clause of Dr. Yandell's first proposition, I think there must be a mistake, for from the statistics which I have collected, more females die in proportion to the number attacked than males:

AGE.	FIRST TABLE.		SECOND TABLE.		TOTAL.	
	DEATH.	RECOVERY.	DEATH.	RECOVERY.	DEATH.	RECOVERY.
First 10 years of life.....	5	6	7	19	12	25
10 to 20 years.....	5	19	10	17	15	36
20 to 30 years.....	9	8	11	16	20	24
30 to 40 years.....	7	8	18	16	25	24
40 to 60 years.....	4	5	5	13	9	18
60 to 70 years.....			2		2	
Totals .....	30	46	53	81	83	127

\* Detroit Review of Med., May, 1875.

DATE OF TETANUS AFTER INJURY.	FIRST TABLE.		SECOND TABLE.		TOTAL.	
	DEATH.	RECOVERY.	DEATH.	RECOVERY.	DEATH.	RECOVERY.
First 9 days.....	16	18	28	33	44	51
From the 9th to 21st day....	13	28	19	29	32	57
From the 20th day on.....	1	3	3	13	4	16
Totals.....	30	49	50	75	80	124

SEX IN CASES OF DEATH.	FIRST TABLE.		SECOND TABLE.		TOTAL.	
	CASES.	DEATHS.	CASES.	DEATHS.	CASES.	DEATHS.
Males .....	62	23	107	45	169	68
Females .....	16	7	22	12	48	19
Totals.....	78	30	129	57	207	87

The period at which tetanus seems to have been the most fatal was in patients from 20 to 30 and from 30 to 40 years of age. This differs somewhat from Dr. Yandell's conclusions, but the study of a larger number of cases may entirely change the figures.

As I said before, I believe that we have in chloral hydrate one of the most useful agents known for the treatment of this terrible disease, but I also maintain that in using it alone we are neglecting to do our full duty. A combination of chloral hydrate, potass. bromid., morphia and calabar bean would seem to be that best suited to the majority of cases. Removal of foreign bodies, maintaining the bowels in a relaxed condition, exclusion of light and maintenance of perfect quiet, with plenty of stimulus and liquid food, are not to be neglected. Quinine should be given in large doses if the temperature is high, and chloroform may be given by inhalation to modify the severity of the spasms.

Should the glottic spasm despite these measures, be so severe as to threaten life (and it often does), tracheotomy should be resorted to at once.

Whatever the drug employed in this disease, it must be given in large amounts, frequently repeated. Many of the cases in

both tables, but especially the first, were undoubtedly lost owing to the fact that the drug was not given in sufficiently large doses. Ordinary "large doses" are out of the question. Those only succeed that would in other diseases be considered *enormous*. As much as 1,140 grains have been given in twenty-four hours to a child *æt.* 12 years with only good results.

Prof. H. G. Wood,\* of Philadelphia, speaks highly of the use of bromide of potassium in this disease. He cites eighteen cases, in two of which deaths occurred. He says: "I have been unable to find a recorded death from the disease after the free exhibition of the bromide, although according to Dr. Roemer one or two have occurred." It is for this reason that I believe that this drug should be combined with the chloral. To have any effect both of the drugs must be given in *very large doses*, the tetanic spasm seeming to antagonize the effects of the drugs. Some of the cases of death recorded in these tables might, undoubtedly, have been written recoveries had the drug been used with sufficient freedom.

Chloral has been used in another way by Dr. Macnamara.† Believing that it exercises no control over the spasms, he gives it at night in 40-grain doses and an additional dose in the morning if the temperature is above 101° F. No other medicine is given. Patient is made to take four ounces of brandy with milk every four hours. He claims to have saved seventeen in twenty consecutive cases (traumatic?) occurring in natives of India.

When it is impossible to give it by the mouth, it may be given by the rectum in milk. It has been given subcutaneously with a resulting cure by Dr. J. Hyde Salter‡ and others§. The rectum, however, affords every advantage when it is impossible to give it by the mouth. Intravenous injections of chloral which have been tried in France|| are not justifiable, unless an immediate and decided effect is necessary to save life.

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\* *Materia Medica and Therapeutics*, Phila., 1877, p. 313.

† (*Practitioner*, Nov., 1874). Quoted by H. C. Wood, *op. cit.*, p. 323.

‡ *Practitioner*, Dec., 1876.

§ *Ribell. Ann. de Gynécologie*, June, 1875.

|| *Oré., Gaz. de Paris*, 21, 1874. *Cruveilhier, Gaz. des Hôp.*, 49, 1874. *Labbé, Gaz. de Paris*, 21, 1874. *Tillaux, L'Union*, 101, 1874. *Lannelongue, Gaz. des Hôpitaux*, 125, 1874.



Dr. J. K. Bigelow\* in one case of tetanus found great relief to spasm by opening the wound and putting in chloral.

Dr. Allison Maxwell,† of Indianapolis, Ind., tried this in one case, but the smart of the application was so great that the patient could not bear it, and afterwards would not allow even a weak solution of chloral to be used locally.

Mr. R. W. Findlay,‡ V. S., in two cases of traumatic tetanus in the horse, secured a favorable result by giving  $\mathfrak{S}\text{iv}$  potass. bromid. and  $\mathfrak{S}\text{ii}$  chloral hydrate in  $\mathfrak{S}\text{viii}$  water three times a day.  
191 WEST TENTH ST., New York City.

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#### ARTICLE V.

REPORT OF THREE PECULIAR CASES OF PARALYSIS, WITH RECOVERY IN EACH CASE. By H. D. Valin, M.D., Chicago. (Read before a meeting of the West Chicago Medical Society, January 24, 1881.)

CASE I. *Paralysis of Lower Extremities, with Tremors and Convulsions Following a Concussion of the Spinal Cord.*

W. H., male, single, aged twenty-four, born in this country, heavily built, strong and plethoric. Family healthy; no constitutional disease. While walking very fast, on a wooden sidewalk in the city, November 14, 4 p.m., came across the space left by a missing plank which his left leg entered, and, with an effort to prevent a fall forward, he fell flat on his back on the sidewalk, producing concussion of the spinal cord.

There was complete paralysis of the lower extremities, with anæsthesia, cold clammy skin, retention of urine, slow pulse, and respiration increased in frequency and labored. The left arm was slightly affected, and there was dizziness and headache. No external injury. Pain excessive in the lumbar region and reflected over the abdomen.

A physician, called on the spot, diagnosed concussion of the

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\* American Practitioner, Dec., 1877.

† American Practitioner, Jan., 1880.

‡ N. Y. Med. Record, 1876, p. 613.

spinal cord, and proposed an hypodermic injection of morphia, but the patient and his friends refused, and the patient was taken home in a street car. I saw the case at 7:30 p. m., and prescribed a liniment :

R	Chloroform.....	ʒss.
	Morphiæ sulphat.....	gr. ij.
	Tr. opii.....	
	Tr. belladonnæ.....	a a ʒij.
	Liniment. saponis .....	ad ʒij.
	M.	

To be applied all over the back every half hour. Patient took, also, three-eighths grain of morphia (powder) every hour to induce sleep. (Three powders were taken.) Directions were left to warm the feet and legs. Patient slept about half an hour that night. Pain mostly relieved. Micturition took place, though with difficulty, the next morning.

A good deal of pain was complained of in the head, in the pit of the stomach, over the solar plexus of nerves, and also in the lungs. Bowels had not moved for two days. He took 10 gr. each of calomel and ipecac which moved the bowels thoroughly the next day and produced emesis, once.

November 18, he began to take 30 grs. iodide of potassium and 50 grs. of the bromide in twenty-four hours, and took that during nine days. He began to improve a little from the beginning. Headache diminished, and so the pain in the back, while some motion returned in the right leg. He had bromism on fourth day, on which account he had to diminish the dose of his remedy. He used to take three-eighths grain morphia at night, sometimes twice as much. Sensibility returned partly in the legs, more in the right, also a slight amount of motion. Less pain was complained of, though there was a good deal of tenderness along the spine, and over the abdomen. Appetite increased. There was all that time some tympanitis of the bowels, for which he used synapisms, oil of turpentine stupes, and castor oil internally.

From the 22d to the 29th of November I was absent, and found the patient about the same on my return. He had not taken any remedy for three days; had been feverish, and had had chills two or three times. He used to have involuntary

tremors of the legs in the night. I prescribed a few doses of 8 grs. quiniæ and 5 grs. comp. ipecac. powders, and bromide of potassium, 40 grs. a day, with  $1\frac{1}{2}$  drachms of fluid extr. of ergot. The morphia powders were replaced by the deodorized tr. of opium in equivalent doses, and this was taken now and then when required.

It was eighteen days after his fall when the patient was able to get up once a day with crutches. Sensibility was so blunt in the left leg that the prick of a pin would hardly be noticed.

December 16. Patient had not taken any remedy for a few days, and had moved with his family to the next block on the day previous, catching a bad cold. About 3 p. m., he fell into a sort of tonic spasm, with tremors of the lower extremities, fearful headache, contraction of the pupils, and stiffness of the neck and whole vertebral column. I saw him about 4:30 p. m., when he began to have clonic convulsions, and a wild delirium, tearing his bedclothes, making violent motions, and holding a pillow between his arms with efforts at tearing it with his teeth. The pulse was increased to over a hundred pulsations during the attacks, each of which lasted about twenty minutes, during which most of the muscles would strongly contract, and the limbs be partially flexed. The scalp and integument of the back were hot and tender, every passive movement being painful; but the control of the will had a certain influence over the convulsions at the beginning.

I applied ice to the head, gave about 40 drops of the deodor. tr. of opium, half a drachm bromide of potassium, and administered chloroform on a handkerchief at every return of the convulsions, that is six different times. As the patient had not passed water since morning, and as the bladder was painful under pressure, a warm compress was applied over it, and micturition took place fifteen minutes later with some difficulty. There was no albumen in the urine. It was half past six o'clock, and the patient being conscious, the chloroform was stopped—one ounce had been used—and there were no more convulsions that day. Patient took quinine for his cold, bromide of potassium, and 20 drops of the deod. tr. of opium, every three hours.

Patient improved till December 22, when he had convulsions

more violent than the first time, and he remained in that state from 4 to 7 p. m. Again he inhaled chloroform  $\frac{5}{16}$ ss, and he took half a drachm each of chloral hydrate and bromide of potassium. The convulsions ceased after he was under the full influence of the chloral and fast asleep. In his delirium he sang mourning hymns, and his hearing was good, at least in regard to musical notes, for a hand-organ happening to play in the street, he made the motion of turning the handle with his right hand, and tuned his groans to the music. Between each convulsion he was rational. He again complained of a desire to micturate. During these convulsions, they referred to his having been bitten on the hand by a dog three years ago, and he alluded to it himself, but he had no difficulty in drinking water, and no sign of hydrophobia. These convulsions must have been the result of cold on the hyperæmic spinal cord and membranes, manifesting thus all the signs of cerebro-spinal meningitis. Patient's bed lay in a corner of the room, with a door at his feet, and one near his head, communicating with unheated rooms which were often opened into, sometimes both at the same time.

December 24. He began to take the sulphate of strychnia one-tenth gr. three times a day. This afforded him much relief, and he is able to be out now every day with his crutches. The spinal column is tender in the lumbar region, and the left leg is too weak to bear the body's weight; it is yet hardly sensitive to external irritation. Patient is nervous and irritable.

This case belongs to the third category of cases as given by Erb in Ziemssen's Cyclopædia, and an impairment of the lower extremities is likely to remain for life. My treatment was that of Erb just referred to, except that he says: "*Strychnia should not be resorted to until all the symptoms of irritation are past.*" But in this peculiar case, I am glad that I did not delay its use so long. I propose now to employ electricity. I may add that, a few days ago, patient took by mistake 50 grs. of bromide of potassium in the evening. The result was that he hardly slept any that night, was restless, vomited twice, had roaring in the ears, and a loss of appetite. These symptoms disappeared the next day.

CASE II. *Hemiplegia at fourth month of pregnancy.*

December 18, 1880. Mrs. L., at fourth month of pregnancy, fell unconscious and paralyzed, on getting ready to sweep the floor in the morning. Her mother died from paralysis. She is thirty-two years old, tall and spare, of the nervous temperament, and was married last year, this being the first time that she has become pregnant. Her husband left for Texas two weeks previous, and she had much grief on that account. Following the fit, patient's left side was completely paralyzed; the left side of the tongue, the left arm and the left leg not being at all influenced by any voluntary effort. Patient was at first unable to speak, had difficulty in swallowing, and did not sleep for seventy-two hours, or until morphine was resorted to. The sensibility was normal in the paralyzed limbs, and no pain was complained of anywhere.

I saw her on the third day after the accident. She could speak with difficulty, could swallow fluids, a little at a time, and could move the leg slightly. The tongue was protruded with difficulty, and to the left side; it was coated yellowish. Pulse was 92 a minute, temperature normal; the bowels had not moved for two days, and the uterus was normal as to its shape and position, at the present period of pregnancy. I ordered a tablespoonful of castor oil, repeated after three hours, which had no effect, and I gave 10 grs. bromide of potassium in a drachm of co. tr. of cinchona every four hours, during three days, to calm the nervous excitement and tone the system; I also gave one-fourth gr. morphia powders to procure sleep. December 21, I replaced the bromide by one-sixteenth gr. of strychnia three times a day. A fly blister two inches square was applied to the right side of the neck on some painful points, and to make counter-irritation. Patient had to take morphia to induce sleep for five nights, and she took, December 22, nine co. rhubarb pills, in divided doses to move her bowels. From that day rapid improvement set in. Motion returned in the leg, in the arm also, slightly at first, and the hand began to grasp a little. The tongue cleared in a couple days, and the appetite returned. Patient's husband came back about that time, and she was able to be up, when supported on both sides.

December 28, 4 grs. of citrate of iron were added to the strychnia three times a day. A fly blister three inches square was applied over the roots of the left brachial nerves. This seemed also to have had a good result. Motion became more and more perfect in the arm. January 16. Patient is perfectly well, and resumes her daily occupations. Disease did not interfere with the pregnancy.

CASE III. *Bulbar paralysis recurring after one year. No treatment.*

H, male, single, aged seventy-two years; was living in a mountainous district, alone in a stone house, where he was much exposed to cold. It was in the winter of 1878, about the 15th of December; on rising in the morning he noticed that he could not speak at all, though his memory of words was not impaired, and that he could hardly swallow. He belongs to a healthy family, never had any constitutional taint, but has atony of the bladder, with incontinence of urine at times. He always had some difficulty of speech, depending on a slight degree of tongue-tied.

On the third day he could say a few words, and swallow better. The left side of the tongue was paralyzed and that organ was protruded to the left side, motions of the head were slightly impaired, and patient was very emaciated. Pulse 82 a minute, no fever, some winter cough. He had suffered from want, cold and privations, anxieties and depression. He had some wealth, and had just lost several hundred dollars in transactions. A physician prescribed 5 grs. bromide of potassium three times a day, which did not seem to have any effect, and he was convalescent all winter and got better in March. He attended to a part of his affairs during that while.

November 1879, patient had another attack for which he took 10 grs. bromide of potassium three times a day for a week, and afterward, the citrate of iron and strychnia in appropriate doses. He improved in a few weeks, but did not feel perfectly well before spring. He has had no return of the disease yet this winter.

802 S. Halsted St.



## ARTICLE VI.

A CASE OF ACUTE ABSCESS OF THE LIVER, OPENED THROUGH THE ABDOMINAL WALLS; WITH RECOVERY. By Samuel J. Holmes, M.D.

I regret that I am obliged to give the history of the case, substantially as I recall it from memory, not having kept a diurnal history, but if I was able to present it more in detail, perhaps it would furnish no *special* features, as differing from the usual case of acute abscess of the liver.

It is interesting as an extremely rare affection, in the temperate climate, and one belonging, *par excellence*, to the warm, and is still further interesting, as illustrating the recovery of a patient, even under the adverse circumstances of age, and the breaking down of a large tract of glandular structure, in an organ so important as the liver, and seems to indicate the advisability of early operative procedure (to evacuate the abscess cavity), as soon as the liver can be clearly defined, as having become adherent to the abdominal walls. The cessation of the patient's discomfort, and the gradual but constant recovery from the weakened condition into which she had necessarily sunk, prove the operation to be a measure of economy, in the preservation of strength, for to have put off the opening of the abscess until nature should have created an opening, would have been a positive prolonging of the patient's suffering, insured in a measure her exhaustion (as her physical forces were fast succumbing) and would eventually have proven fatal.

History: Mrs. B., of 53 N. May street, aged fifty-nine years, of full habit, called me in the latter part of August. The patient suffered an attack of malarial fever, about thirty years ago, since which time she has enjoyed comparatively good health. Eight years ago she became cognizant of an enlargement within the abdomen, which she supposed to be a tumor, but felt no further inconvenience or discomfort from the same, other than a sensation of pulsation. She could not say that she had been aware of its increase in size since that time. Two weeks previous to see-



ing me, she had visited friends in Wisconsin, where malaria was prevailing, and feeling unsafe here, returned to her home in Chicago. Three days previous to summoning a physician, she crossed the lake to South Haven, returning the following day, and suffered extreme sea-sickness both in crossing and returning. After returning, she ate injudiciously of fruit, and upon the following day I saw her with these symptoms presented: Vomiting; pain, quite severe in character, referred to the epigastric region; tenderness over the same region; constipation of the bowels; coated tongue, fever, and an acceleration of the pulse. My attention was directed to the enlargement within the abdomen, which by palpation and percussion I was enabled to define as follows: Easily traceable to three inches below the umbilicus—and beneath the ribs above the umbilicus—to the left of the median line above and below the umbilicus (with a zone of percussion resonance between the enlargement and spleen) and to the right of the median line above the umbilicus, the surface was smooth, and its inferior extremity blunt and rounded. It will be seen that the enlargement extended below the umbilicus, while the tenderness, as before indicated, was limited to that part above the umbilicus corresponding to the epigastric region. I concluded that the enlargement was that of the left lobe of the liver, and by differentiation, it was fair to suppose, one of hypertrophy, from malarial causes of years previous. Fatty liver, amyloid liver, and carcinoma, were readily excluded, and as no fluctuation was discernable, the idea of a cyst, of hydated nature, or chronic abscess, was not to be entertained.

Enlargement of the liver frequently, but not invariably, exists in abscess of the liver, and the enlargement may be found to be limited to a particular direction, and not affecting the whole organ. But the acute symptoms were referred to the stomach, considering the immediate exciting causes which would be calculated to disturb that organ with such symptoms as were manifest in the case, and so the liver was excused from hepatitis, of a suppurative nature, and the nearest approach, or conjecture (for it could be but conjectural at this time) was the thought, that perhaps there might exist a perihepatitis, or circumscribed peritoneal inflamma-

tion of that portion of the liver from which the pain and tenderness arose.

The patient was given a saline cathartic (which did not operate), bismuth and pepsin to control vomiting, quinine to allay the fever, an opiate to control pain, and a sinapism was applied over the epigastric region, followed by hot flaxseed meal poultices continuously applied. These remedies were administered in behalf of the stomach, but if hepatitis had been clearly made out, would not have been inappropriate as treatment. The symptoms continued for about one week, with varying intensity, and no change in the administration of medicine, except to change the cathartic, and finding that the greatest obstinacy of the bowels obtained, to effect a movement later by enemas. The amount of morphine required to control the pain was large, which first created the suspicion that the pain was too intense for a catarrhal condition of the stomach. By request of the family, Prof. Byford was called in consultation, and, after a careful examination, rendered the diagnosis of hypertrophy of the liver, and referred the acute symptoms to the stomach, a diagnosis in accord with the first made. His only suggestion was to supplant the morphine by hydrate of chloral, and the administration of a small amount of calomel, which was carried out. Another week passed, and the symptoms changed materially. The fever which had been continuous, became intermitting, with frequent rigors through the day, and sweating (all of which symptoms were irrespective of the time of day) and the patient growing weaker. It seemed apparent now, that pus was confined in some part of the body, and, to a probability, the lower. Very soon, a slight pouting, or prominence manifested itself about three inches above the umbilicus, corresponding to a point near the median line, which soon took on redness, and over which a sense of fluctuation was discernable. This became larger and larger, and gave every evidence of an abscess of the liver. Prof. Byford again saw the case with me, and did not question the presence of an hepatic abscess. The patient was weak and debilitated, and a few days previous, I placed her upon calisaya bark and wine, continuing the quinine, and dispensing with all other medicine except the chloral. Satisfied that the anterior surface of the liver was

adherent to the peritoneal surface of the abdominal walls (and the patient growing constantly weaker), I advised her to allow of its being opened, but she preferred to await the powers of nature to consummate the same, and so deferred. A few days passed, and becoming apparently exhausted, and disappointed in the expedition with which nature ulcerated its way through the walls of the abdomen (the anterior wall of the abscess), she reluctantly submitted to an operative procedure, which was to extenuate her suffering, and place her in a condition to recover. I opened the abscess freely, selecting a point as near the center of the prominence, over which fluctuation was to be felt, as possible (for there was no point which manifested any degree of thinning of the wall over that of other parts of the same), and drained from the cavity from six to eight ounces of pus, introduced a drainage tube, and covered the whole with oakum. The abscess was dressed twice a day, and the wine and bark given freely. The effect of opening the abscess was a most salutary one. Rigors, fever and sweating, ceased immediately. Sleep, natural and refreshing, came to assist in the return of strength, appetite fast improved, and the change in the patient's general condition was such as to win from her the greatest commendation in surgical interference, for she termed it "her new lease of life." The abscess cavity, after the first week, slowly but progressively filled in from the bottom; the drainage tube was frequently shortened; and in five weeks from the time of opening the abscess, the cavity was closed; the patient walking about (in spite of the excessive drain), but with some remaining asthenia.

Microscopic examination of the pus, revealed in addition to ordinary constituents of pus, cholesterine crystals, and disintegrated hepatic tissue.

The diagnosis of the affection is obscured early in its history, by the infrequency of the disease, in our climate, and the equivocal symptoms which accompany it. Indeed, it cannot be made with any degree of certainty, previous to the discharge of pus into one of the cavities of the body (with its subsequent elimination externally to the sight), or its manifestation upon the abdominal walls, where manual exploration reveals the true nature of the disease. It is true, that the clinical symptoms of the disease, in

the warm climate, would doubtless arouse the suspicion of the disease being present, but as I have before said, with us it would be equally rare, to venture even the supposition, before the time when it asserts itself, and makes unnecessary any hypothesis, and again the symptoms which precede the fluctuating enlargement, are not always well marked.

Nature is indeed conservative in advancing the abscess to this issue, and as we think of the situations in which it *might* have ruptured, with a positive fatal termination, it lends an opportunity to applaud her efforts. The bronchial tubes and alimentary canal are next in order as to favorable localities for evacuating the pus, and it might be evacuated into the right pleural cavity, and subsequently into the lung of the same side, with favorable termination; but the peritoneal cavity, the pericardial cavity, or hepatic vein, and inferior vena cava, are receptacles which furnish, as a rule, fatal results. We can scarcely expect a favorable issue, even when the abscess is evacuated in the *most favorable* direction, and multiple abscesses render the prognosis most grave, as is apparent.

The case made a quick recovery, if statistics as to the average duration are reliable. Of course the direction taken by the pus, determines the time required for recovery. The average duration would seem to be from four to five months, and the longest time is required where the discharge is through the integument. From observation of cases, it would seem that the largest number of cases occur in the right lobe (the left in this), and most frequently in the posterior portion (anterior in the case considered).

To arrive at the special factors of etiology, is a matter of great difficulty. I do not think that it was possible for the patient to have sustained a contusion, sufficient to have caused the abscess, in crossing the lake, although she describes the "shaking and pounding" as of considerable moment. I do not remember to have read or heard of a case in which a chronic congestion of the liver, became kindled into an activity sufficient to have eventuated in abscess, but the liver in this case, was hypertrophied, and doubtless in a state of chronic congestion, and I am not disinclined to look upon this feature as enacting some part, or sustaining some causative rela-

tion, in the etiology of this case. I do not think that a visit to a malarial country had to do with reinforcing a previous existing condition, for the patient suffered no malarial fever subsequently.

Sufficient uniformity in cases as to their apparent etiology is a desideratum, and the case ranks admirably with precedent in this regard.

313 Fulton St., Chicago.

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ERRATA.—The article entitled "A case of Iritis Serosa," published in the February number of the Journal went to press, the proof not being corrected. The following are misprints:

Page 133, line 2, for should read to; page 133, line 6, congestion should read injection; page 133, line 7, synechia should read synechiæ; page 133, line 7, makes should read make; page 134, line 3, appearances should read appearance; page 134, line 7, and should read or; page 134, line 20, synechia should read synechiæ; page 134, line 22, punctured should read punctated; page 134, line 25, for should read to; page 135, line 28, noticed should read noted; page 136, line 7, T + 91 should read T + 1.

THE Illinois State Board of Health is now engaged in preparing the second edition of the "Register of Physicians and Midwives," and will be obliged to the profession if they will call attention to mistakes and changes of location or omissions. Secretaries of medical societies are also requested to send the roster of their officers, and the names, age and cause of death of any medical men who have died within the last year.

The Board is anxious to make the Register as perfect as possible. It is also important to every one that his or her record is correct.

## Clinical Reports.

### NOTES FROM PRIVATE PRACTICE.

#### ARTICLE VII.

##### *Metastasis of Mumps.*

This is a rare complication of that disease, and I am for that reason induced to send the report of a case occurring in my practice.

Mrs. B., age twenty-three, had had mumps for one week. The swelling was extreme. The brunt of the attack was borne by the sub-maxillary glands. The parotid and sub-lingual glands were moderately enlarged. She was then seized with a chill, followed by vomiting and an intense headache. This was at 4 p. m. When seen by me at 10 p. m. the cephalalgia was so severe that she could not lie still in her bed; pulse 112, sharp and quick, temperature 101, tongue coated with fur. The swelling in the salivary glands had greatly diminished since the onset of inflammation of brain, and next morning had entirely disappeared. Patient then presented the following symptoms: Intolerance of light and sound, delirium, pain over the whole of vertex, reversed action of pupils, restlessness and insomnia; pulse, 114 sharp and quick; temperature, 101.4; tongue, coated; bowels, obstinately constipated. This state of things continued during the day up to 10 o'clock. When I saw the patient next morning she was then out of danger. The pain had gone and she was perfectly rational, in fact, well; the disease leaving her suddenly in the night. That afternoon she again had a rise of temperature and rapid pulse, 100, and I looked for a return of meningeal trouble, but it proved to be a return of the parotitis. The glands on one side were moderately enlarged for two days, and then permanently

One of the notable events of the present month was the annual meeting of the Academy of Medicine, when Dr. Fordyce Barker delivered his inaugural address. Other ceremonies filled up the programme, the most attractive one being a supper, at which the loving-cup was passed around, and a good many other cups followed in its wake. The attendance was large and the conviviality great. Dr. Barker's address was not a powerful effort, and hardly worthy of his powers. He spoke at his best when he condemned the narrow antagonism which regular physicians had so long shown towards homœopathy, and he thought that if this unreasonable exclusiveness and opposition on our part were withdrawn, homœopathy would soon sink to its proper level. He referred to the enviable social and financial position of (successful) New York physicians, and gave some instances of the liberality and appreciation of their patients. One physician in this city had received a New Year's present of \$10,000. Several others had received somewhat smaller sums. Dr. Barker did not refer to the pecuniary status of those not in a fashionable practice. After his address, a number of prominent gentlemen were called on for supplementary remarks. It was disheartening to see the utter incompetence of distinguished Professors to make an impromptu speech. Still they all knew enough to say that they felt "gratified at the honor," but would prefer to remain quiet. As this was during the *mauvais del quart d'heure* before supper, their silence was after all felt to be the truest eloquence.

There seems to be a return in this city to the times of the Bacchantes and of those ingenuous days when processions in honor of the god Priapus marched through the public streets displaying the symbols of their worship. Any one walking along Broadway just now will encounter here and there a miserable wretch bearing aloft a flaming placard inscribed with this legend: "Use Damiana Bitters, Extract of Damiana, the Great Aphrodisiac Remedy and Stimulant to the Sexual Organs of Both Sexes." This advertisement is blazoned before the eyes of men down-town and of ladies up-town. It is little better than the advertisement of a brothel, and will doubtless increase business in that quarter. Not that damiana is an aphrodisiac, however. It neither excites nor increases erotic feelings except in rare cases. I have known



as much as three ounces to be given daily without its affecting the sexual organs. It is, however, a tonic to the spinal cord, if we may use the term, and it is very useful in atony of the bladder.

While on the subject of foreign poisons I am inclined to furnish you with the results of an experiment with *cannabis indica*, made while house-physician at Bellevue Hospital.

#### TOXIC EFFECTS OF CANNABIS INDICA.

The preparations of *cannabis indica* are so variable in strength, particularly in hospitals, that it used to be considered rather a duty to make occasional trials of their quality. Three patients, to whom drachm doses of the tincture were given, were made quite delirious by it, the delirium ending in some relief of pain and in a heavy sleep. Two of these patients were nervous women and the third was a man with locomotor ataxia. Therefore the results were not sufficiently definite and satisfactory. Determined to get more exact results, one evening at 7:30 p. m., I took a drachm dose of the tincture. At 9 p. m., feeling no especial effect, I took a drachm and a half more, making two and a half drachms in all. At about 10 p. m., while writing, I felt a mistiness over my eyes; I could not carry on any train of thought, and was obliged to stop my work. I was restless, and at length went up stairs to a friend's room, where several persons were sitting about. I began to feel some exhilaration. It was very easy to begin laughing and then very hard indeed to stop. There was an indescribable sensation of strangeness. I should have liked to have been introduced to myself and assured by the *alter ego* that I was all right, for I did not feel so. Soon I felt a numbness and compression on my head as though a long, slender-fingered hand were on it. This sensation passed to my body and extremities. It was a sort of tingling pressure, and not very pleasant. I could see and hear well. My throat became dry, and during the act of swallowing it seemed like an enormous cavern. I began to feel the drug more and more strongly. I was losing confidence in my power to control myself and keep my mind straight. I stopped talking, not knowing what conversational or emotional absurdity I might drop into. I felt as though I were isolated, set off from the others in the room, and that they were watching me

intently and curiously, expecting some very interesting, or rather ridiculous, physiological effect to develop. This was, to some extent, actually the case. Finally I left the room, intending to go to bed. I did not feel a natural sleepiness, but rather a heaviness and inability to control my thoughts and take care of my body. My sensations were so strong that I concluded to walk out a little way and see if it would not clear things up a little. I walked without difficulty; was not dizzy, though my gait was at times uncertain. On coming back I felt a tingling and dragging weight in the calves of my legs. My mind was now in a very muddy and yet flighty state. My attention was constantly wandering off; I had no vivid fancies, but was wondering and speculating on this and that; I could only come back to my actual surroundings by an effort; my heart beat rapidly; my throat grew drier; my skin was wet with perspiration; I had no anaesthesia of the skin. A person came in to see me. I was rational, but seemed to be absent-minded and to think slowly. The feeling of heaviness and oppression grew on me. I was obliged to lie down, and at about 11:30 p. m. went to bed. Then came the visions; I felt as though borne up and up into space by some invisible, irresistible power. I went whirling round and round, up and up, in unending rotation, yet very gently and softly. At the same time crowds of faces and forms appeared before me; beautiful colors, shifting figures, innumerable shapes, gorgeous landscapes and tropical foliage came and went in endless panorama. By a great effort of will I could turn in bed and open my eyes; the visitors disappeared; then my eyes closed and they came again in continued succession and infinite variety. All the while I had the same feeling of being rolled on and on through an endless empyrean. These feelings were not pleasant, in fact there was an indefinable sense of oppression with them. I felt as though the drug had me in its power, and I wasn't at all sure that I had not taken too much of it. I had no sense of the prolongation of time, and none of the "double consciousness," which the drug is asserted to give. Fifteen or twenty minutes after going to bed I was roused to attend to a patient. I was able to get up, appreciate the fact that he had a urethral chill and give him M. x of Majendie and order some other needed measures, though it required a strong effort

and close watching of myself. After returning to bed my visions and atmospheric flights ceased. Later, vomiting came on, and after that I fell into a heavy, dreamless sleep, from which I did not awake for eight hours. The next morning I felt a great deal of heaviness and *malaise*. My appetite was very good, however. I should say that as far as my experience goes, the delights of the hashish eater are illusive. The sensations are oppressive, the visions unsatisfactory, and if one must intoxicate himself he had better do it in the conventional way, with a reliable distillation of cereal products. As far as the practical usefulness of the drug is concerned as a hypnotic or anodyne, no one of the house staff was able to report any definite results, and my own subsequent experience was that it is an extremely unsatisfactory agent. It is quite slow in its action also.

The foregoing account was written shortly after the experiment, and it strikes me now that there is in its rhetoric a touch of the gorgeousness seen in the visions. But the sensations when one is thoroughly drugged with hashish are very powerful, and on coming out from them a person is apt to feel that language is quite inadequate for their expression.

Dr. George M. Beard has quite stirred the town with his experiments in mesmerism, or trance. He has a number of trance-patients whom he summons to his office two or three times a week and then brings out in them the various and curious phenomena characteristic of the condition. The interest in the subject is certainly spreading, and, as now studied, there may some results of practical value arise in mesmeric methods. They have indeed already been used practically in some of the dispensaries of the city, and have supplemented medicines in rheumatic, neuralgic, nervous and joint affections. It is said that there are more susceptible persons in the West than on the sea-board, and experiments on trance-patients will soon be undertaken there. The method, adopted by professionals, of testing the susceptibility of persons to trance, is to make the patient first gaze steadily at the mesmerizer while he places his hand on the forehead and makes gentle strokes with the thumb down towards the bridge of the nose. The patient is told to close his eyes and is gradually but firmly impressed with the belief that the manipulation will prevent

the opening of the eyes. If susceptible it will be found in a few moments that the patient really cannot open his eyes, and then he is in a condition of trance and can be manipulated at the operator's will. The marked features of the condition are that the will of the mesmerized person is held in abeyance, and that he responds in every way to the suggestions of the operator. He sees, feels, hears and imagines whatever is suggested to him, and he does many things which show that his nervous power is greatly concentrated in the directions that are suggested to him. A most striking and demonstrative test of the reality of the phenomena is the increased muscular excitability that is developed very often. By pressing upon the "motor points" with a blunt point the contractions of the proper muscles ensue. Thus pressing on the motor point of the pronator *radii tiores* will cause pronation; pressure on the motor point of the abductor *minimi digiti* will cause abduction of the little finger, and so on. Each particular muscle can thus be picked out just as is done with the battery to a patient in a normal condition.

Some very interesting and striking therapeutical results are now being claimed for static electricity. Dr. W. J. Morton is, in particular, trying to revive the use of this form of electricity, and he certainly appears to be justified in his enthusiasm over it. The apparatus used is like that of Charcot, and is very much larger than any heretofore employed by electro therapeutists. General tonic and sedative effects are gotten from it. But in addition, it seems to be peculiarly efficacious in old rheumatic or in neuralgic cases where there is probably some inflammatory effusion or adhesion. By the use of what is called the "electrical wind," conjunctivitis has been aborted also; so at least it is said. Excellent results follow in paralysis, and often much better results than the older forms of electricity give. All this, of course, is only one side of the matter. It may turn out, that on the whole not much more can be gotten from the sparks than from galvanic currents. I have, however, seen some of the results referred to, and cannot but think that static electricity ought to be tried again with better instruments than have so far been used.

The news in literary quarters is not very great. I hear, however, that Wm. Wood & Co. will soon publish a Supplement to

Ziemssen's Cyclopedia, which will bring everything in that treatise down to date. It will be published as a single volume, and will be entirely separate from the Cyclopedia. The same firm will soon publish a work on Histology and Microscopic Technology, which will undoubtedly attract much attention. It is edited by Dr. Thomas E. Satterthwaite, of this city, president of the Pathological Society and well known by his occasional contributions to pathology and histology. The book is written by different American histologists, and will represent concisely not only what Germany has done, but what American investigators have accomplished also.

NEW YORK CITY, Feb. 15, 1881.

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#### ARTICLE IX.

THE MOUNTAIN REGION OF WESTERN TEXAS AS A HEALTH RESORT. By F. Charles Lawrence, A.M., M.D., Kerrville, Texas.

Since the completion of the "Sunset" and International Railways to San Antonio, Southwestern Texas is becoming quite a favorite locality for Western and Northern physicians to send their patients for the winter months, whose condition may require a removal from the inclemency of a Northern winter.

The great majority of invalids remain in San Antonio, having been directed there by their medical adviser, and with all due respect to our learned *confreres* of the North, it would be no exaggeration to state that not more than one in twenty have a personal knowledge of the locality, beyond the reading of an article in some periodical, written by persons who are incapable of estimating the merits of a climate as regards its health-restoring properties.

The leading authorities on phthisis, both American and foreign, advocate, as the most essential qualities of any climate favoring the retardation and cure of this disease, the following climatic conditions, viz.:

A moderate altitude above sea level, between 1,200 and 2,000

feet, with a moderate rain-fall and freedom from malarial influences. Under this heading may very appropriately be considered the coexistence, with the qualifications just mentioned, of a light, porous subsoil, favoring rapid drainage after rain. *Vide* Buchanan and Bowditch.

A winter temperature sufficiently mild to admit, without discomfort, daily exercise in the open air.

Nutritious, well-cooked food, and properly ventilated sleeping rooms.

Now, San Antonio is located in a valley only 700 feet above the sea, and the atmosphere is more or less highly charged with moisture from the San Antonio river and San Pedro creek, which meander through the town, besides the water that is carried through most of the streets in irrigating ditches. The subsoil is of a clayey character, and during rainy weather its streets are well-nigh impassable for mud, while during the dry season the dust renders life almost intolerable.

Some of the San Antonio physicians send their patients to Boerne, a small village thirty miles northwest of the city; but its location on a substratum of clay, and exposed to the damp south winds which invariably succeed the "Northers," together with its water supply from the Cibolo Creek, which contains a considerable amount of organic matter in solution, renders this point very undesirable in many respects as a winter residence.

Malarial fever of a severe type prevailed there during the months of last autumn, and during a two week's sojourn at the Boerne Hotel, on the banks of the Cibolo, I suffered from a severe attack, only recovering after going up to the mountains.

Thirty-six miles northwest of Boerne, in the midst of beautiful mountain scenery, is the village of Kerrville, the county seat of Kerr county. Its elevation is 1,800 feet above the sea, and possessing so many advantages on the score of health wanting in San Antonio, I take the liberty of placing a description of it before the profession.

Kerrville is located on the banks of the Guadalupe river, whose water is very free from organic matter, and so clear that objects on its bottom may be seen at a great depth. The town rests on a gravelly substratum, and the drainage is so perfect that even



after a heavy rain storm, a few hours' sunshine renders the earth perfectly dry. A high range of hills to the northward breaks the force of the "Norther," while the distance from the sea—over 250 miles—deprives the returning south winds of much of their moisture and rawness.

The winters are very mild, snow and ice, in ordinary seasons, being almost unknown, and the winter sometimes passing without any rain, the invalid may, with the exception of a few days about Christmas, take daily exercise in a balmy and invigorating mountain air.

Good carriage roads extend in various directions, and fine fishing and hunting abound in the vicinity. At the headwaters of the Guadalupe several caves invite the curious to seek for "hidden mysteries."

The people are very kind and hospitable, being persons of high intelligence and culture, who came here in the first and second stages of phthisis and have been completely restored to health.

An additional advantage is now offered by this place, and one not be overlooked by the invalid, viz.: good hotel accommodations and at a moderate price. Mr. J. F. H. Back, of Cincinnati, has recently purchased the hotel in this town, and one can secure, what every one knows who travels in Texas, that *rare luxury*—well-cooked food and clean, comfortable rooms.

During the summer months the heat is never excessive, and with a constant southern breeze and cool nights, the summer can be passed much more pleasantly than at the North. During at least eight months in the year one can sleep in the open air with not only impunity, but in the early stages of phthisis with positive benefit. Invalids who propose coming to this mountain region will find a daily line of comfortable hacks running from San Antonio to Kerrville and the upper country. To any physicians who may desire further information concerning the climate of the country, I will here state that Dr. Petersen, of Comfort, Texas, who has been for some time past a voluntary observer for the U. S. Signal Service in this region, will very gladly answer any inquiries that may be addressed to him on the subject.



## Foreign Correspondence.

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### ARTICLE X.

#### LETTER FROM VIENNA.

VIENNA, FEBRUARY 6, 1881.

EDITORS CHICAGO MEDICAL JOURNAL AND EXAMINER :

I send you a brief account of a case which is the sensation of the hour in both medical and lay circles here, namely, a resection of the stomach. The operation was first proposed and successfully executed upon dogs seventy years ago by Merrem, and several pupils of Billroth have in recent years made extended researches as to its practicability upon man. The first actual operation upon a human being was made by Péan, in Paris, in 1879, for pyloric cancer, the patient dying on fourth day. Billroth has long been anxiously awaiting an opportunity which finally presented itself, two weeks ago, in the person of a woman forty-three years old, who had enjoyed excellent health until last October, when she began to exhibit symptoms of gastric cancer, and to suffer a corresponding decline in health. Upon examination by Billroth, a tumor as large as an orange was found at pylorus. Deeming the case a favorable one for operation, Billroth made a transverse incision upon tumor, which was found to be carcinoma of pylorus and of lower third of stomach. Adhesions with omentum and colon were carefully broken up—the large and small omenta cautiously separated. All vessels were ligated before division, so that the bleeding was very slight. The tumor was brought out and laid upon abdominal wall, and an incision made through stomach—at first only backwards—one centimeter beyond the infiltrated part. A similar incision was then made

through the abdomen. Six stitches were applied to keep edges of wound together. The incision was then extended, completely severing the stomach. The edges were then united so as to leave an opening corresponding in size to the duodenum. The tumor was then completely separated from duodenum by an incision parallel with that in stomach. The edges of the two organs were then carefully adapted by means of fifty stitches with carbolized silk, and the entire wound cleansed with two per cent. carbolic acid solution. The operation, including narcosis, lasted one and a half hours. This was January 29. The patient has been entirely comfortable—but very slight fever, no pain. During the first days nutrition was maintained by clysters of pepsin and wine, but the woman can now digest milk comfortably. The prospects for recovery from the operation are excellent, as the edges must by this time have become thoroughly adherent. The piece removed was fourteen centimeters long; a goose quill was with difficulty passed through the pyloric orifice. The stomach is not materially changed in shape, though it is, of course, smaller.

W. T. BELFIELD.

THE PYGOPAGI.—The pygopagi is the curious appellation assigned to two young children now on exhibition at the Egyptian Hall, Piccadilly. They present features of singular interest, however, and are well worth inspection, as showing the limits within which it is possible to effect safe delivery of abnormally developed children. The pygopagi are two girls, firmly united at the pelvis, and being everywhere else distinct and separate. Into this conjunction certain of the external genitalia enter also, and how far this may be the case internally must, of course, be a matter of conjecture. Dr. Playfair has manifested considerable interest in the children, and proposes to exhibit them at the Obstetrical Society early in December. As a spectacle the two little objects present nothing to repulse, but are rather attractive in appearance, their movements and expressions being interesting and amusing. That they are perfectly independent in ideas and desires is evident, though they agree apparently in the best possible way. They are well developed for their age, a little over two years, and seem healthy and lively.

## Society Reports.

### ARTICLE XI.

THE WEST CHICAGO MEDICAL SOCIETY. Stated meeting, February 28, 1881. Prof. H. M. Lyman, M.D., read a Paper on Anæsthesia.

It comprised the history of alcohol, its chemistry and physiological action. Alcohol was extensively used in Europe, as a remedy, since the sixteenth century. Its general sale was authorized in 1676. The British soldiers became acquainted with it in Holland in 1551, and brought it to England. In 1774 it was generally used by the people of all classes in this country.

Alcohol coagulates albuminous substances, and, in large doses, acts as an irritant poison. It produces anæsthesia by diminishing the motion of the nerve-cells, and may in the same manner produce paralysis and death. In doses of one and a half ounces, it reduces the temperature, and in connection with quinine, it will produce a more permanent effect than when the latter is used alone.

These few notes show the wide range embraced by the Professor under the head of anæsthesia. This paper was only a part of a complete work on the subject, which he will have published in the course of the year.

A few questions were asked to and satisfactorily answered by Dr. Lyman. The name of Dr. G. H. Peppitts was presented for membership and referred to the censors. Meeting adjourned.

H. D. V.

## ARTICLE XII.

## WOMAN'S MEDICAL COLLEGE.

The Eleventh Annual Commencement of this institution was held in Centenary Church, March 1. There were seventeen graduates, one of whom did not receive her diploma immediately, because she had not yet attained her twenty-first year. Number of students in attendance through the year, seventy-five. Conferring of degrees by Pres. Wm. H. Byford, M.D., S. H. Stephenson, M.D. The only female professor present distributed the boquets in a very elegant manner.

The class valedictory was rendered by Dr. Ella M. Gilchrist, who gave a brief history of the practice of medicine by women since the beginning of the world, stating that long before the Christian era, women's medical colleges had existed in Egypt. She alluded to the achievements of Russian female doctors in the last Turco-Russian war, and ended this sketch in stating that Elizabeth Blackwell was the first woman who received a medical diploma in this country (1849). Massachusetts has founded the first medical school for woman in modern times. She then enumerated the duties which her class had just entered upon and bid farewell to the faculty. All persons present enjoyed the address to the utmost, and repeatedly applauded the speaker.

The faculty address was given by Prof. Wm. J. Maynard, M.D., and chiefly consisted in timely advice, and the good wishes of the faculty.

The present is the largest class that ever graduated from the college.

H. D. V.

### Reviews and Book Notices.

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ARTICLE XIII.—A PRACTICAL TREATISE ON NERVOUS EXHAUSTION (NEURASTHENIA); ITS SYMPTOMS, NATURE, SEQUENCES, TREATMENT. By George M. Beard, A.M., M.D., Fellow of the N. Y. Academy of Medicine; of the N. Y. Academy of Sciences; Vice-President of the American Academy of Medicine, etc. 8vo., cloth, pp. xx 198; New York: William Wood & Co. 1880.

This is an eminently American book. The disease of which it treats is much more common in this country than in Europe, and most of its literature was published in the United States, originating with Dr. Beard himself. This fact will bring a difficulty in the way of any reviewer, for one can hardly blame an inventor for an excessive admiration of his discovery, or for extolling it in all directions.

Neurasthenia is the name under which spinal irritation (Hammond), idiosyncrasies and morbid fears, cerebral irritation, hypochondriasis, and many symptoms of an exhausted nervous system are classed. It treats of functional diseases, and is a connecting link between the disease of the body and those of the mind. It is hoped that it will open a new and important field of inquiry into the latter.

It seems that one cause of neurasthenia has been overlooked, or very little appreciated by the author; it is the proper training of the mind. Let the reader imagine an Indian, or any wild man, thrown all at once in the midst of advanced civilization, and he can form an idea of his awkwardness, and the desperate struggle of his mind to grapple with the difficulties of the situation. He may not be able to stand it at all. Every one of us is born an

ignorant being. Little is our stock of inherited knowledge, though a peculiar disposition for acquiring it surely passes from parents to children. Until a comparatively advanced age, very little has been learned about the million intricacies of human life and civilization, yet if one stops learning at any period of his life, he must remain ignorant of many facts; his faculties will remain rudimentary in that direction, and he will exhibit those rude, whimsical, or eccentric peculiarities, which, after all, are nothing but a lack of the necessary training. His brain will remain weak and childish from a want of proper culture. Nay, some persons will take pleasure in encouraging these fancies; vital energy must expend itself, and many are the insane who owe it to themselves for their wretched condition. Life in a highly civilized community is a hard trade to learn, many are its drawbacks, yet it lacks its schools and its teachers; while remedies will do little for idiosyncrasies and morbid fears, despite the assertions of Dr. Beard.

This book is highly interesting, but, we are sorry to say, has too much in common with the pamphlets of advertising physicians.

Ergot, arsenic, cannabis indica, opium, caffeine, zinc, the bromides, chloral, strychnia, electricity and massage are the drugs and remedial agents relied upon by the author, with greater attention to hygiene than is recommended in most diseases.

H. D. V.

ARTICLE XIV.—TRANSACTIONS OF THE MINNESOTA STATE MEDICAL SOCIETY FOR THE YEAR 1880. St. Paul: H. M. Smyth & Co.

A copy of the proceedings of the State Medical Society of Minnesota is at hand and reflects great credit upon the profession of that progressive commonwealth.

Within its pages are discussed some very important topics. The essay upon "The Law of Heredity," by Dr. Daniel Leasure, of St. Paul, is a very well written *résumé* of the views of the best authorities upon that subject. Dr. Emery, of Minneapolis, contributes an article upon "Medical Education," in which he advocates the general use of the metric system among physicians.

The article entitled "Cardiac Hypertrophy, with Valvular Lesions," by J. P. Squires, M.D., is the report of a very interesting case. It is illustrative of the different opinions held by different practitioners concerning the same case.

The *lack of an index* is a serious defect in this volume and detracts much from its completeness as a good specimen of book-making.

B. W. G.

ARTICLE XV.—THE MICROSCOPE AND MICROSCOPIC TECHNOLOGY; A TEXT BOOK FOR PHYSICIANS AND STUDENTS. By Heinrich Frey, Professor of Medicine in the University of Berlin. Translated and edited by George R. Cutter, M.D., New York.

This work has passed through several German and one English edition, and is already well known to the English speaking public. This edition has been improved by the addition of new matter, a better type and paper, and the enlargement of the pages. The notes of the American editor are enclosed in brackets and add much to the value of the book. In the department of pathology we find these pages remarkably scant, the author referring to it only as morbid physiology, and the work consists, after the first few chapters devoted to the mechanisms, testing and manipulation of the microscope, and the preparation and mounting of objects, of a close exposition of microscopical anatomy. We regret to see so many of the cuts destitute of the clearness requisite to accurate illustration, and in Section IV, on "Testing the Microscope," occurs an apparent discrepancy of statement, which in some future edition we would like to see explained. The author tells us that a good objective, magnifying eighty or one hundred times, should, with the proper illumination, enable one to recognize the systems of lines sharply and distinctly on each scale of the Pleurosigma Angulatum, while weaker objectives, magnifying forty or fifty times, should show something of the lines. To the same paragraph is appended an illustration of this well-known test diatom apparently magnified at least four hundred and fifty times. Further on we read that Hortnack's newly-constructed No. 9 will resolve the lines clearly; likewise his No. 8. Then, turning to the price list of this manufacturer, in the



appendix, we find the magnifying power of these systems with the lowest eye pieces stated as four hundred and ten and two hundred and fifty. There are also a number of inaccuracies in the index.

These faults indicate hasty preparation and revision, ill-suited to so important an adjunct to the medical library as this work is intended to be.

W. L. D.

ARTICLE XVI.—THE MICROSCOPIST. A Manual of Microscopy and Compendium of the Microscopic Sciences; Micro-mineralogy, Micro-chemistry, Biology, Histology and Practical Medicine. Fourth edition; enlarged, with 252 Illustrations. By J. H. Wyeth, M.D., Professor of Microscopy and Histology in the Medical College of the Pacific, San Francisco, California. Philadelphia: Lindsay & Blakiston.

This excellent work has been evidently very carefully prepared, and the amateur microscopist and studious physician will find in it a very satisfactory aid to study. While matters of mere curiosity receive but brief attention, every necessary fact and principle relating to microscopy is carefully stated and classified.

Practical medicine receives most attention, and the chapters on histology, pathology, diagnosis and etiology constitute the larger part of the book. They are finely illustrated; most of the cuts in the three latter being very clearly transferred from Rindfleisch. Many of the colored illustrations are fine, and an excellent thing we notice is that, appended to most of the cuts are figures showing the amount of enlargement of the subject in diameter. Owing to the progress of microscopic science and the constant improvement in optical invention it has been found necessary to provide an appendix in which microscopic technology is brought well up to date. An index and glossary of microscopic terms closes the book. It has evidently been the author's intention to furnish, not so much an exhaustive treatise as a *résumé* of microscopy which will enable the student in any department to pursue original investigations with a general knowledge of what has been accomplished by others, especially considering the needs of physicians and students of medicine.

W. L. D.

**ARTICLE XVII.—A PRACTICAL TREATISE ON FRACTURES AND DISLOCATIONS.** By Frank Hastings Hamilton, A.M., M.D., LL.D., Surgeon to Bellevue Hospital, New York; Consulting Surgeon to Hospital for Ruptured and Cripples; to St. Elizabeth Hospital, etc.; Author of a Treatise on Military Surgery and Hygiene, a Treatise on the Principles and Practice of Surgery, etc. Sixth American Edition, revised and improved. Illustrated with 352 wood cuts; 8vo, pp. 909. Philadelphia: Henry C. Lea's Son & Co. 1880.

Extract from preface to the sixth American edition:

"The present work remains, therefore, the only complete treatise on fractures and dislocations, in any language, except the treatise of Malgaigne, which latter has undergone no revision or republication since the date of its first edition" (1855).

The present work is the pride of American surgical literature. It is so well known by the profession at large that it seems useless to state that no surgeon should be without it.

The author is endowed with that soundness of judgment and criticism which few writers possess on subjects which they have made a specialty of, and this did not contribute little towards the well-deserved popularity of a book which has in twenty years reached its sixth edition.

It is handsomely printed, and beautifully illustrated with cuts, several of them new, that are indispensable in such a work, and represent all the latest improvements in mechanical surgery. It contains a chapter on General Prognosis, and one hundred pages more than the preceding edition. A large part of it has been re-written.

H. D. V.

**ARTICLE XVIII.—MINOR SURGICAL GYNÆCOLOGY.** A Manual of Uterine Diagnosis and the Lesser Technicalities of Gynæcological Practice; For the Use of the Advanced Student and General Practitioner. By Paul T. Mundé, M.D., Professor of Gynæcology in Dartmouth Medical College, etc.

The subscribers to Wood's Medical Library will find this a very satisfactory addition to it. It is written for the class, to supply whose needs this series was first introduced, the general practitioners. While its necessity may not impress itself upon

the gynæcological expert who by years of practice and research has familiarized himself with every detail of his specialty, or to the favored student who has secured to himself a practical course in gynæcology; yet to the large majority of the medical profession these practical chapters will be of great value. Emmet's maxim, "Success in the treatment of the diseases of women lies wholly in attention to minute details," sounds the key-note of these pages. Nor do historical lumber or literary research encumber them, but each one presents valuable hints for the daily use of the beginner in gynæcological art, so clearly is every digital and instrumental detail of the various manipulations and minor operations, which he is liable to meet with every day, laid before him.

The work is illustrated by three hundred wood cuts of instruments, tables, positions, pessaries, etc., many of which will be recognized, some of which are new.

W. L. D.

ARTICLE XIX.—THE DESCRIPTIVE ATLAS OF ANATOMY. A Representation of the Anatomy of the Human Body; in 92 Royal quarto plates containing 550 figures; pp. vii-92, 11. Philadelphia: J. B. Lippincott & Co. London: Smith, Elder & Co. 1880.

This atlas is anonymous, a poor recommendation in medicine. "Every figure has been carefully revised by a Metropolitan Hospital surgeon and a successful teacher of Anatomy in one of the chief London medical schools." He should have drawn the figures himself, we are sorry to say, for some are ill-executed: the vulva, for instance, looks as if it had been drawn from imagination, not from nature.

It is a cheap book, with too darkly shaded cuts, indistinct types, and many abbreviations not supplemented in the page. It does not come up to the standard of the plates of Gray's Anatomy, and must prove of little value to students in this country, while practitioners need better works. It is a blunder to paint bones black, and use black types over them. It is useless to precede the names of every muscle by an *M* when the cut represents nothing else.

"Hepar, stomachus, cystis/fellea, cavum peritonei," etc., are obsolete, as well as the lobus dexter and lobus sinister of the liver. The coloring of arteries and veins is an old idea devoid of advantages, since the color is so little in the living subject. The only advantage of that atlas is cheapness and a multiplicity of figures.

H. D. V.

ARTICLE XX.—A PRACTICAL TREATISE ON SURGICAL DIAGNOSIS, DESIGNED AS A MANUAL FOR PRACTITIONERS AND STUDENTS. By Ambrose L. Ranney, M.D., Adjunct Professor of Anatomy, and Lecturer on Minor Surgery in the Medical Department University of New York. Wm. Wood & Co., 1879; 386 pp.

As is implied in the title, this book touches upon points of Differential Diagnosis only, omitting all questions of Ætiology, Pathology and Treatment.

By reading across the page the contrasting points are well brought out, while the particular symptoms are shown from above downward. The reader will be well repaid for his study of fractures, dislocation, hernia and tumors.

Dr. Ranney has arranged a valuable book for the profession.

J. H. T.

ARTICLE XXI.—THE CAUSES AND RESULTS OF PULMONARY HÆMORRHAGE, WITH REMARKS ON TREATMENT. By Reginald E. Thompson, M.D. Illustrated; 130 pp. London: Smith, Elder & Co., 1879.

Upon the subject of this volume the author has expended, as he tells us, much diligence and many years of study and investigation. It is the outcome of the physical examination of over twenty-two thousand patients while living, and over three hundred of the same patients *post mortem*. The opening chapters treat in a condensed way of the anatomy of the lung, the pathogeny of hæmorrhage, while the body of the book is made up of clinical cases illustrating inherited predisposition to bleeding, causes, physical signs, sequelæ, consequences, treatment, etc.

It is an interesting, readable monograph upon the subject of Pulmonary Hæmorrhage, and should be read by all. J. H. T.

**ARTICLE XXII.—DISEASES OF THE THROAT AND NOSE, INCLUDING PHARYNX, LARYNX, TRACHEA, ŒSOPHAGUS, NASAL CAVITIES, AND NECK.** By Morell Mackensie, M.D., London; Senior Physician to the Hospital for Diseases of the Throat and Chest; Lecturer on Diseases of the Throat, at the London Hospital Medical College, etc. Vol. I. Diseases of the Pharynx, Larynx, and Trachea. 8vo, pp. 570, cloth. Philadelphia: Presley Blakiston. 1880.

Dr. Mackensie's book is as good as, and not any better than, many works of the same kind. A good classification of subjects, useful references to authors who treated them before, a vast experience at the command of the author, the exclusion of superfluous matter, are so many advantages which will make of it a reference book of much usefulness. But it is one of those works which each old lecturer must produce on his special subject once in his life. It may prove very useful to the House Physician to the "Hospital for Diseases of the Throat and Chest," may be to physicians in general, in England; but it will not answer the purpose of the average American practitioner, on account of its deficiency in what relates to treatment.

There is a superfluity of etiology and diagnosis in our days with a lamentable scantiness of the methodical treatment of each disease in its various forms as met with in this country, and this is precisely what the profession in America is craving for, and what the book of Dr. Mackensie lacks; although it would be a good addition to a large library. It is well printed, has very few typographical errors for a first edition, and enough pretty cuts to illustrate the subject.

H. D. V.

**ARTICLE XXIII.—DIPHTHERIA: ITS CAUSES, PREVENTION AND PROPER TREATMENT.** By J. H. Kellogg, M.D. Good Health Publishing Co., Battle Creek, Mich.; 64 pp.

This small work is one of a series of popular medical literature, and aims to so educate the public mind on the matter of early treatment of the disease as to render efficient aid to the physician when called. Certainly there is great need of a good deal of popular knowledge on this subject, for the fragmentary articles published in the family papers go but a small way towards educating the people in this matter.

In so small a work, in our opinion, it is hardly necessary to describe and arrange the disease into classes—all phases of but the same disease.

It is, on the whole, a book needed in the household, of service to those having children, and should be widely circulated.

J. H. T.

**ARTICLE XXIV.—A GUIDE TO THE PRACTICAL EXAMINATION OF URINE, FOR THE USE OF PHYSICIAN AND STUDENT.** By James Tyson, M.D., Professor of General Pathology and Morbid Anatomy in the University of Pennsylvania. Third Edition, revised and corrected. With illustrations. Philadelphia: Lindsay & Blakiston, 1880; 183 pp.

Dr. Tyson has in this edition simply rearranged somewhat his previous editions, making a very neat and compact manual on the subject of Urinalysis.

Some of the less important matter of the two previous editions has been omitted, with the view of keeping the size of the volume within its original limits.

The cuts are good, some of the older and poorer ones being replaced by some more satisfactory. The book is so bound as to lie open upon the laboratory table ready for reference. It can be recommended as reliable and convenient.

J. H. T.

**ARTICLE XXV.—HANDBOOK OF SYSTEMATIC URINARY ANALYSIS —CHEMICAL AND MICROSCOPICAL.** By Frank M. Deems, M.D., Laboratory Instructor in Medical Department, University of New York. New York: Industrial Publishing Co., 1880; 30 pp.

Will afford valuable aid to both student and practitioner. Can be recommended to all.

J. H. T.

**ARTICLE XXVI.—THE MICROSCOPIST'S ANNUAL FOR 1879.** Edited by John Phin. New York: The Industrial Publishing Co., 1880; 48 pp.

This is a handy little volume to have; contains complete list of microscopical societies, dealers in apparatus and accessories, postal information compiled especially for microscopists, duties on imported instruments, etc. To be issued annually.

J. H. T.

## BOOKS AND PAMPHLETS RECEIVED.

- Excision of Cancer of the Rectum, a Study of 140 Cases. By Chas. B. Kelsey, M. D.
- Report of the Louisiana State Board of Health for 1880.
- On the Introduction of Food and Medicine into the Stomach when the Ordinary Channel is obstructed. By T. Humbert, M. D.
- Electricity in Medicine and Surgery. By John J. Caldwell, M. D.
- Errors in the Diagnosis of Eye Diseases. By S. Theobald, M. D.
- Catalogue of Medical School, Harvard University, 1880-81.
- The Surgical Treatment of Cancer of the Rectum. By Chas. B. Kelsey, M. D.
- The Sanitary Problems of Chicago, Past and Present. By John H. Rauch, M. D., Secretary State Board of Health of Illinois.
- The Development of the Osseous Callus in Fractures of the Bones of Man and Animals. By H. O. Marcy, M. D.
- The Treatment of Ophthalmia, Purulenta Gonorrhoea and Neonatorum, with Clinical Remarks. By C. A. Lambert, M. D.
- Abdominal Pulsation, Simulating Aneurism of the Abdominal Aorta. By John Williams, M. D.
- Anæmia in Infancy and Early Childhood. By A. Jacobi, M. D.
- Cæsarean Section (Porro-Müller method) with Removal of Uterus and Ovaries. By Elliott Richardson, M. D.
- The Treatment of Hip Disease. By E. H. Bradford, M. D.
- Winter Health Resorts. By Boardman Reed, M. D.
- Scarlatina. By Dr. Wm. B. Atkinson.
- Cases Treated by the Lister Method. By T. H. Gerrish, M. D.
- Phthisis Pulmonalis. By L. De Brémond, M. D.
- Otitis Media Non-Suppurativa Chronica—1,000 Cases. By E. E. Holt, M. D.
- The Asylums of Europe. By Geo. M. Beard, M. D.
- Minor Surgical Gynecology. By Paul F. Munde, M. D.
- Transactions of the Minnesota State Medical Society for 1880.
- Bulletins of the Public Health. Issued by the Supervising Surgeon General, Washington, D. C., 1880.
- Proceedings Louisiana State Medical Association for 1880.



Hand Book of Urinary Analysis, Chemical and Microscopical. By F. M. Deems, M. D.

Second Biennial Report of the Illinois Eastern Hospital for the Insane, at Kankakee, Ills. October 1, 1880.

Report of Albany Hospital for two years ending January 31, 1880.

Rocky Mountain Health Resorts. By Chas. Dennison, M. D.

Transactions State Medical Society of Wisconsin for 1880.

Atlas of Histology. By E. Klein, M. D., and E. N. Smith, M. D. Parts xii and xiii.

Atlas of Skin Diseases. By L. A. Duhring, M. D. Part vii.

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SPECIAL NOTICE.—We desire to inform the friends of the JOURNAL AND EXAMINER, that a man by the name of W. G. Gano, is going about the country collecting money on the JOURNAL account and making no return of it here. He has *no authority to make such collections.*

The JOURNAL employs no agents. It endeavors to transact all of its business *directly* with the profession. We take this method of informing the profession that, in paying money to any person representing himself as our agent, they do it at their own risk.

WHOOPIING COUGH has been successfully treated by Dr. Barety, of Nice, by turpentine vapor. By accident, a child severely affected, was allowed to sleep in a room, recently painted and redolent with turpentine odor, when noticeable improvement took place. Dr. B. has since employed this drug, placed in plates and allowed to stand in the rooms occupied by whooping cough patients. He holds that the disease is mitigated and its duration lessened by this simple expedient.

### Selections.

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#### I. NERVOUS DISEASES.—MIGRAINE.\* By Thos. Lothrop, M.D.

The word Migraine, used by the French, and Megrim of our own vernacular, have a common Greek derivation, and are employed by the neurologist to designate a variety of neuralgia, usually considered to be trigeminal, one of the most common forms of this very prevalent disease. It is selected as an important subject for investigation and inquiry, especially so in view of its alarming frequency during the period of bodily development, when the system is under the strain of excessive mental work. We may regard the present faulty system of female education, in which the nervous system, especially prior to puberty, is exercised to an extent disproportionate to its powers of endurance, while the muscular, the digestive, and the vascular functions are so far neglected that they fail to impart the vigor required to maintain the body in a healthy equilibrium, as an important causative element in this and other varieties of the neuroses. The increasing frequency of nervous disorders in our American life, embraces a field for professional study, which has brought forth some of the best contributions to recent medical literature.

In discussing migraine, the writer is compelled from necessity to treat in a practical way, avoiding as far as possible useless and vague theories, while attempting to show what is known of its etiology, and also what can be done for its relief.

Pre-eminently migraine is an inherited disease. This may be more positively stated than in regard to any other of the neuroses. A case has fallen in my own experience of a mother who trans-

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\* Read before the Buffalo Medical Club, August 18, 1880.

mitted to her offspring this legacy of suffering she herself had unfortunately inherited. A young medical friend, the victim of the disease, traces its origin to his mother, who is the subject of severe trigeminal neuralgia, which she inherited from an epileptic parent. The reciprocal relation existing between migraine and epilepsy has been taken as an argument to prove the identity or similarity of causes, and of lesions giving rise to the two diseases. Assuming that migraine is a form of trigeminal neuralgia, Anstie, Seguin, and others conclude that a lesion exists in those portions of the pons variolii and medulla oblongata, which give rise to the sensory roots of the trigeminus. This centric origin of the disease, it seems to me, is more easily assumed than clearly demonstrated, and yet its analogy to epilepsy in many of its features points to the great nerve centers as its source and origin. The best authority on the etiology and pathology of neuralgia, leads the inquirer into a network of finely spun theories, from which we escape but little the wiser for the venture. This want of positive knowledge in regard to the causes of many of the neuroses leads to indefiniteness in nomenclature, and also to great difficulty in differential diagnosis. In proof of this we may cite the fact that many writers use as synonymous terms hemicrania and migraine, and describe the symptoms and phenomena observed in this variety of neuralgia under one or both of these terms, while the disease under consideration is often, indeed most frequently, termed trigeminal neuralgia.

In endeavoring to ascertain the causes of this form of neuralgia, it seems to me that the function of the spinal cord, simply in the transmission of reflex-sensations, is too little considered, and that too great stress is placed upon its centric origin. It is acknowledged that a peculiar susceptibility to reflex action prevails in certain temperaments, while in others, all possible reflex sensations are difficult and often impossible to produce. The cause of this is as difficult of explanation as any other individual idiosyncrasy. The trigeminus, either on account of its origin, or of its distribution, clinically is known as a frequent avenue for the transmission of reflex sensations, conveyed to and through the spinal cord from a variety of sources in the organism. The reason for this is also not clear. We may conjecture that the

ganglionic cells of that portion of the medulla from which the trigeminus takes its origin, possesses a peculiar susceptibility to the reception of impressions, and therefore the most common avenue for the transmission of such impressions. In the pathology of this and other neurotic diseases, we cannot fail to recognize the important position of reflex action. In migraine, whether its origin is traced to a spinal lesion, as the primary seat of the disease, or whether such lesion, if any exist, is secondary, due to the effect of constant excitation upon the ganglionic cells of the medulla, such excitation primarily arising from morbid processes at the periphery of nerves, or whether it is really a neurosis of the sympathetic nerve, there is a broad field for scientific inquiry, which is at present imperfectly understood.

Seguin points to the similarity of symptoms and conditions in migraine and epilepsy, and conjectures the centric origin of migraine. It is known that cases of migraine have finally resulted in epileptiform seizures. Brown-Séquard, as early as 1850, called attention to the relation of lesions of the spinal cord and certain spinal nerves to epilepsy, while Van der Kolk in an exhaustive work, which is included in one of the early volumes of the new Sydenham Society publications, demonstrated in epilepsy a lesion of the posterior half of the medulla. Contraction of the vessels of the cerebral pia mater has also been observed by Brown-Séquard in epileptic animals, while others have observed that irritation of the peripheral nerves produces a like contraction of the cerebral vessels which explains epileptic seizures under the influence of peripheral irritation. This may be termed reflex epilepsy, and in the lighter forms, epileptic vertigo or petit mal. The occurrence of the aura of migraine, similar to the aura of epilepsy, is an interesting coincidence in considering these two varieties of the neuroses, while the periodical return of attacks of migraine, similar to that observed in epilepsy, is also deserving of note.

These subjective conditions, giving rise to these two diseases are referred to in this connection to explain a position, which, while it has not been established by actual experiment and investigation, may be inferred from the premises we have laid down: that is, inasmuch as it is established that epilepsy is due to a

spinal lesion, and there exists a similarity of symptoms in the two diseases, we may be justified in saying that in *well-established* cases of migraine there will be found a like condition of the ganglionic cells of the medulla. I think this inference is justified by the facts, which have been imperfectly presented. Further investigations in pathology of the neuroses will, I do not hesitate to say, fully corroborate this view.

Migraine also is essentially one of the hystero-neuroses. The sexual organization of woman is the source of a series of nervous phenomena, which, while they are heterogeneous in their manifestations, are closely allied in their etiology. A pathological condition of the uterus and its appendages in which we include the ovaries, is a fruitful source of reflex impressions. The trigeminus and sympathetic nerves are frequent avenues for the transmission of these impressions to and from the spinal cord and medulla. But little is found in medical literature upon this subject. For-dyce Barker, in his work "On the course and treatment of reflex insanity in woman," demonstrates the influence of the uterus in its periodical menstrual changes, in its pregnant condition, as well as during the period subsequent to parturition as a causative element in the production of mental aberration. In the causation of the neuralgias there exists a close and undisputed relation, borne out by facts, occurring in daily professional experience. The most severe cases of migraine met with in practice are connected with the menstrual epoch.

The relative proportion of cases in the sexes is, according to Eulenberg, as five in the female to one in the male. This predisposition of females to the disease is a fact deserving of consideration, and points to the menstrual function as among the most frequent of the probable causes. The occurrence of attacks of migraine in females, who are not subjects of dysmenorrhea, and in whom the uterus, from the most careful examination, fails to unfold any organic lesion, is a problem for the neurologist to solve. Cases are not infrequent in which at every menstrual period, migraine is as certain as the menstrual flow itself, and the victim suffers, not from the local congestion or hyperæmia, incident to this peculiarity of her sex, but from reflex sensory impressions which have been transmitted from a distant part of the organism,

to the head, only to increase the torture, which would be more tolerable if confined to its seat of origin.

It would weary your patience, and prove too great a tax upon my time, to attempt to notice the various causes of migraine, and their relations to local and constitutional conditions. Enough has been said to direct attention to the more prominent and important conditions. Neither would it be profitable to refer to its symptomatology, which must be familiar to all. The importance of therapeutical indications to the practitioner so far transcend all other questions, when called to the bedside of a victim suffering from this disease, that the writer begs to direct attention to its treatment, with hasty reference to such cases as may be of practical utility to members of the Club.

The principles enunciated above afford a natural subdivision for the treatment :

1. Treatment of the prodromata.
2. Treatment of the attacks.
3. Treatment of the pathological condition of the nervous system upon which migraine depends.

1. Plainly if the migraine depends upon atonic dyspepsia, the use of *nux vomica* in small doses, as for instance, one drop of the tincture every hour during the waking hours, combined with tincture of belladonna in half or fourth-drop doses, will prove of benefit. Seguin also recommends the patient to reduce the saccharine and amylaceous foods. In cases depending upon anæmia, depraved nutrition, tonics of iron and cod-liver oil are indicated.

2. Treatment of the attacks. If depending upon the presence of undigested food in the stomach, a good emetic is the speediest and most effectual way to relieve the sufferings; avoid all food during the attack; give the stomach rest; an exception to the rule may be made in cases in which the patient strongly desires some particular article. I have a case on hand in which dried beef has "touched the spot," to use the words of the sufferer; another in which a few strawberries would satisfy the stomach. These are only suggestive, and afford a practical hint which may be useful. I have also known a few teaspoonfuls of whisky to afford relief. There can be no doubt of the efficacy of guarana in the early period of the attack. The fl. ext. in doses of two

teaspoonfuls every half hour, until three or four doses have been given, especially if given before nausea sets in, has often proved beneficial in my hands, and as often failed. It is deserving of a trial.

Another and more recent remedy is found in the nitrite of amyl. Eulenberg (Ziemmsen's Cyclo., vol. xiv, p. 27) states that "the indications for its use depend on the fact that it possesses the power of dilating the blood vessels, although whether by acting on the contracted elements or by paralyzing the vaso-motor system is yet unsettled." Dr. Berger, in the *Medical Times and Gazette*, (1870, II, p. 469) first employed this agent in a case of migraine with almost instant effect; "the pain was charmed away" as it were, and did not return during the day. Holst states that in a female patient the attack itself was not only cut short, but its recurrence was postponed longer than usual.

Dr. Geo. M. Beard recommends caffen in 2 grain doses, to be repeated every hour until three or four doses have been given, and claims for it positive merits.

Chloral hydrate is also recommended in doses of 10 to 15 grains, but fails in my hands.

But the surest remedy is morphia administered hypodermically. In doses of one-fourth grain combined with one-thirtieth to one-sixtieth of atropia, it is *par excellence* the remedy in the severer forms of migraine. I especially direct attention to the combination of morphia and atropia. The use of the latter remedy is very important. The reason is found in the similarity of migraine to epilepsy, in its pathological relations. A large experience in the use of these remedies in the severer forms of migraine, has convinced me of their necessity and great utility. It is useless to waste time in any other direction. I am now referring to the more violent forms. In the mild cases, I would not advise its use; other and safer remedies can be substituted, and in the majority of cases the disease made to yield.

3. The treatment of migraine as a pathological entity, with a view to its cure, is a most important matter. Reference has been made above to the lesion of the medulla, upon which migraine is supposed to depend, and upon its similarity in some of its features to epilepsy, with a view to direct attention to the



therapeutical indications. Lesions of the spinal cord, and especially of its cranial portion, have generally been found intractable to treatment, and efforts towards their alleviation and cure have not been attended with results at all satisfactory to the profession. The introduction of the bromides has worked a marvelous change in the treatment of epileptiform disease since Van der Kolk gave to the profession a rational idea of its pathology. The system he recommended of prolonged blistering near the occiput, from which he claimed excellent results, has been supplanted entirely by the bromides, to which belladonna and its alkaloid, atropia, have become valuable auxiliaries. What the bromides and belladonna are to epilepsy, cannabis indica is to migraine; not that either of these medicinal agents, or any combination of them will cure every case that may come under observation, but that they will relieve many, and such as are not dependent upon severe spinal lesions, is now generally accepted by the profession.

In 1872, in a short article, contributed to the *London Practitioner*, Dr. Richard Greene brought out cannabis indica as the important remedy for migraine. Prof. Seguin, in the *Medical Record* (vol. XII, page 774, 1877), in an excellent article, confirms the experience of Dr. Greene in the use of this agent, and substantiates his view by the experience of other eminent medical men.

The principle of treatment laid down by Dr. Greene, is to maintain by the use of small doses of the agent, a constant influence upon the nervous system for a long time, the same as is required in epilepsy by the use of the bromides. At first, as a matter of course, no appreciable effect is observed, and not until the use of the remedy is persevered in for many weeks, and the nervous system kept under its influence for a considerable time, will the patient find an appreciable diminution in the severity and frequency of the attacks. It is well to commence with one-fourth grain of the extract, before each meal, for the first fortnight. The dose may be increased to the third of a grain for the second fortnight, to be augmented to a half grain, at the end of four weeks. This amount will generally be sufficient and should be faithfully continued for several months. Success here is only

obtained by persevering effort. Failure is often complained of, when, on inquiry, the agent has not had a fair trial; and to this want of perseverance in other diseases, beside the one under consideration, may justly be ascribed many of the discouragements which attend the well-directed efforts of painstaking and conscientious practitioners.

The writer would not have trespassed upon the time and patience of the Club, if the facts and principles above enunciated were not borne out in his own practice. A case is in hand in which hereditary influences bore a prominent part in its causation; in which the skill of the most eminent men in the metropolis had failed to afford any relief, the patient finally resigning herself to the suffering which seemed inevitably to be entailed upon her at each menstrual epoch, the only hope of relief being in the approach of the climacteric which was many years in the future. Hemicrania, in its severest form, with nausea, insomnia always followed each menstruation. Life was indeed burdened with the anticipation fulfilled with never-varying certainty of two or three days in each month of suffering from which there seemed no escape, and hence no relief. The prolonged use of *cannabis indica* for the period of one year, has afforded such relief that the nervous system has had time to regain long-lost vigor, and the patient is in better health than for many years. Other cases might be cited confirmatory of the utility of the agent. Is the question asked, Has the remedy ever failed in my hands? and I can answer that it has not in any case in which its prolonged use has been made. The trouble is in the want of perseverance of the patient, not in the efficacy of the remedy. I venture to say, however, that in cases due to an aggravated lesion of the medulla, in subjects of feeble nutrition, and of an exhausted and worn-out nervous system, there could not be expected relief from any remedy. Physicians cannot re-mould their patients, nor infuse into their exhausted organizations a larger measure of vital force than they were endowed with at their birth. Migraine, or any other disease, in such subjects, is beyond the reach of medical skill; but in well-selected cases, indeed, in the majority of cases, if we do not succeed in affording permanent relief for all, we certainly will diminish the

severity of the attacks, and the frequency of their recurrence, just as surely as we accomplish this end in epileptiform seizures by the use of bromide and belladonna.

This contribution, for which an apology is due the Club for its imperfections on account of the haste in which it has been prepared, and also on account of the paucity of information in medical literature, especially in regard to migraine, is hesitatingly presented with the earnest wish that it may lead its members to investigate a most interesting type of disease, and also to the use of the important remedy here suggested.—*Buff. Med. and Surg. Jour.*

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## II. STRETCHING THE FACIAL NERVE FOR THE RELIEF OF SPASM OF THE FACIAL MUSCLES.

Dr. Allen Sturge and Mr. Godlee presented a paper on this subject. The patient, a lady, aged 72, had been sent to Dr. Sturge by Mrs. Garrett-Anderson. She had enjoyed good health until the death of her husband, six years previously. After this, her nervous system suffered much; she had fits of depression and debility; and, before long, twitching began round the right eye, extending subsequently to all the muscles supplied by the right facial nerve. She had gone through various courses of treatment without result; and she finally consented to have the facial nerve stretched. The operation was performed by Mr. Godlee on July 20th, by means of an incision behind the ear, from the external meatus nearly to the angle of the jaw. The sterno-mastoid and the parotid gland were pulled in opposite directions, exposing the upper border of the digastric, close to which the nerve was found as it emerged from the stylo-mastoid foramen. The nerve was raised on a hook, and pulled with moderate force. After a few such pulls, the right side of the face was completely paralyzed. The wound was dressed antiseptically, and healed without the appearance of a drop of pus, or the slightest constitutional disturbance. The face remained paralyzed for two months; and for some days after the operation there was a good deal of pain on the right side, and also in dif-

ferent parts of the head, which returned at intervals during these two months. When seen on October 19th, three months after the operation, the face at rest was nearly symmetrical on the two sides; but there was still a good deal of deficiency of movement in the muscles on the right side. She was, however, rapidly improving, every week making a considerable difference. The operation had now been performed five times—three times in Germany by Baum, Schussler and Eulenberg; once in America by Dr. James J. Putnam; the present case being the first case of the kind in England. In all these cases there was temporary paralysis after the operation, varying from two weeks in Baum's case to five months in Eulenberg's. It was remarkable that in every case in which the facial nerve had been stretched for spasmodic tic, the operation had been successful; whilst in several cases of spasmodic affection of other parts, as of the arm, etc., the stretching of the nerves of the part had produced no good effect. In these latter cases, the spasm had usually been of an elaborate character, allied rather to chorea; whereas the former was a simple unco-ordinated spasm of all the muscles supplied by a single nerve. The latter character would indicate a lesion in the center from which the facial nerve took its immediate origin, *i. e.*, the medullary center; whereas the former would point rather to a lesion of the co-ordinating center higher up in the cerebro-spinal axis. The stretching of the nerve certainly produced an immediate effect upon the nerve trunk itself, and it probably also produced a remote effect upon the nerve centers, which effect would be greater upon the lower centers, such as that of for the facial nerve in the medullar, than in those further removed, which were supposed to have to do with co-ordination. In all cases where nerve-stretching was employed for spasms, it would be very important to note whether the spasm was of the simple or of the co-ordinated variety, with a view to ascertain its relative value in the two varieties. The operation was rendered difficult on the living subject by the depth of the nerve and the constant trickling of blood into the wound. The operator should, therefore, secure a good light and efficient assistance. The posterior or auricular vein might very likely be cut on the first incision, and the posterior auricular artery at any period during

the dissection. No vessel of any consequence was, however, likely to be injured if the wound was not carried more deeply than the digastric muscle; should this level be passed the surgeon would find himself in dangerous proximity to the internal jugular vein.—Dr. Buzzard inquired if the effects of pressure on different parts of the face had been tried. This treatment had been found to stop chronic spasm, as in a case under his own care some two years ago. In another case, an accumulation of cerumen in the external meatus set up, by irritation, neuralgic pains, which ceased on removal of the wax and frequent application of a constant current. Dr. Buzzard said he had, at the present time, a man in hospital who was still under treatment, and in whom the supraorbital nerve had been stretched for neuralgia.—Mr. Walsham said that early in the year he had stretched the infra-orbital nerve for severe neuralgia; there was no pain after the operation. He believed the nutrition of the nerve to be that chiefly affected in the operation; this would not influence the intracranial centers, and the separation of the supplying minute vessels from the trunk of the nerve, might sufficiently account for the effects produced. Dr. Sturge said pressure had been made on different parts of the face without effect, and the final operation was had recourse to when all other treatment failed.—Mr. Godlee observed that the stretching must affect both the sheath of the nerve and the vessels. He had another case in which the nerve was stretched the preceding Wednesday, and was succeeded by twitching on both sides of the face.—Mr. Croft related his experience of a case to which he was called by Leibrich in 1877, and in which he cut down to the infra-orbital nerve of a patient, aged 65, who had suffered from severe convulsive neuralgia, the pain radiating along the branches of the infra-orbital nerve. He removed about five-eighths of an inch of this, and stretched it well, until a sense of “giving” was felt in the canal. The operation was performed on Wednesday. On the following Monday the patient left for Adelaide, whence a letter was dispatched saying that, for a time, pain and muscular spasm persisted, and then subsided. Six months later, an attack of gout was followed by convulsive neuralgia, which also subsided. After another six months, however, the pain once more

returned, and to it succeeded permanent relief. Mr. Croft felt at a loss to define the correct treatment for such cases, some recommending a sensory, and others a motor, nerve to be operated on. He did not believe the center of disease to be intracranial. He remembered a case where, following amputation below the knee, the exposed nerve-ends were irritated, and became bulbous. The nerve was cut down on and resected, the ends being well stretched until they "gave" above. The patient, who was a lunatic, and under constant observation in an asylum, had suffered no return of the pain.—*British Medical Journal*.

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### III. A PHYSICIAN'S PROBLEMS IN PSYCHIATRY.

Dr. C. H. Hughes, of St. Louis: Psychiatry is preëminently a practical subject. Comparatively few general practitioners have had adequate opportunity afforded them of practically studying this disease. The protean phase of mental alienation is mainly to be seen under the present methods of teaching the insane in the hospitals. This fact adds perplexity to the mode of properly treating and disposing of insane persons when we encounter them in general practice. When in the course of physical disease mental alienation, either alone or jointly with another organ, supervenes, the absence of that clinical experience which comes from daily intercourse with the insane and daily observation of the disease, and which usually enables the general practitioner to make a prompt and satisfactory decision in diseases he is accustomed more often to encounter, is likely to occasion every kind of hesitation and indecision. This often results in too hasty and indiscriminate consignment of patients to State hospitals. How can a physician determine when a given case can be safely treated at home? To determine this properly the physician must ascertain whether the patient is homicidal, suicidal, violent or destructive in any way to the person or property of others, or to himself, beyond the likelihood of ordinary home vigilance to prevent or circumvent, and he must also determine whether the patient is in imminent danger of becoming so. Is the patient so indecent in his habits, conduct or language or ordinary proprieties of life as to



render it unfit for him to remain long at home? What antipathies has he formed? Is there danger to wife, husband or children, or is their presence detrimental to his mental welfare? Can he be treated safely by medicine alone? Was the insanity caused or is it aggravated by any circumstances surrounding him? What is the pecuniary condition of the family? And many other practical questions are to be solved.

(Dr. Hughes next pointed out at length the importance of this subject and the necessity of great wisdom in making discriminations between those proper to be sent to asylums and those not proper to be sent to asylums.)

Sufferers are sometimes sent to the asylum too early and sometimes too late. There is great need of a more general knowledge of psychiatry out of the asylums. In no class of affections is it so imperatively necessary to encourage the importance of early and prompt treatment, as in diseases of the brain affecting the mind. Among the cases which I have seen too soon or needlessly sent to the asylum are, first, puerperal insanity, during the first six weeks, in consequence of parturient shocks, exhaustive discharges and inadequate nutrition. (And let me say here, in parenthesis, that the low nutrition during the post-parturient period is largely responsible for cases of hopeless insanity.) The post-parturient woman's condition cries most loudly for nutrition for healing and repair. A nutritious, non-stimulating diet never harmed anyone, and I do not believe a single physician, when he is sick, practices what some of them preach on that subject. The second class is that of insanity of utero-gestation. This kind of insanity ought to be kept in abeyance until the critical period has passed, but requires careful watching and treatment. Then we have the insanity of lactation, which may usually be averted or arrested in its incipency by weaning the child and taking it away from the mother and supplying other nutrition, securing private sleep every night, quiet during the day, by means of maltine preparations, and the best possible non-stimulating nutrition.

Then we have general paralysis of the insane. These patients, being never cured, and generally as happy in one place as in another, and seldom dangerous, may be treated as well at home or by traveling as elsewhere, providing they submit without annoy-



ance and danger to themselves or their property, or to others. In cases of acute psychic disturbance, secondary upon temporary hyperæmia, where the patient is conscious something is wrong, and will receive treatment, he may be treated at home. These cases, however, require great vigilance if they have any delusions or suspicions that may lead to homicide or suicide. Delusions and hallucinations based upon auditory diseases render these cases generally unsafe to be treated at home. The advice that is to keep these patients out of the asylum should be cautiously given, and based upon ample means of the friends to keep the patient under constant control. Then we have cases of delirium tremens, mania potu, which may soon be restored by judicious treatment familiar to every physician. Then I proceed to senile dementia, a case of harmless insanity in an old man, a lost mind, which comes from the degenerative changes familiar to us all. No medical man who justly appreciates his position would consign such a patient to the hospital if it be within the power of the family to take care of him. Then insanity connected with far advanced phthisis, unless violent and destructive, is a form not proper to be sent to an asylum. Mild cases of melancholia, where the patient can afford the expense of a medical attendant away from his immediate home, should not be sent to the asylum. These cases are, however, sometimes the most treacherous ones the physician encounters. It is out of them that the daily harvest of suicides is largely made up. These apparently harmless melancholics are the ones whom the physician interrogates with the greatest care. They are not safe either for the physicians or for the friends to be treated at home.

In the new era in medicine now inaugurated by the creation of chairs in psychological medicine in the medical colleges, and the disposition to diffusion of the literature of insanity through the medical profession generally, we shall all soon be quite as well qualified to intelligently advise concerning insanity as concerning other diseases. I have more than once seen patients, who, at home, had given the greatest trouble, when no one at home had the temerity to dare tell him he was insane, cured by telling him candidly that he had been adjudged by a jury to be insane, and was now in an institution provided by the State for the cure of

the insane, and that he, although in a different degree from the others around him, was no less insane than those about him.

The important problem in psychiatry, for forensic purposes is that of the differentiation.

[The paper closed with a discussion of the rights of the insane, in which the author maintained the general principle that "no man of unsound mind should be divested of his liberty unless he was dangerous to himself or to others."]—*Cincinnati Lancet and Clinic*.

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THOMAS KEITH AND OVARIOTOMY. BY J. MARION SIMS, M.D., LL.D., of New York. From the *American Journal of Obstetrics*, April, 1880.

Dr. Keith, of Edinburgh, did his first ovariectomy in September, 1862. Since then he has operated three hundred and three times. When he published his first series of fifty cases, his remarkable success was supposed to be accidental; and when he published his second series of fifty cases, making a hundred in all, his success so far outstripped that of all other operators that it became a wonder and admiration of surgeons all over the world. Since that time I have felt the greatest curiosity to see him operate. I wished to see in what his method differed from that of all other great ovariectomists. I wished to see if there was anything peculiar to himself to account for his great success. Accordingly, while in London, in the summer of 1874, I wrote to him to ask the privilege of witnessing some of his operations; but unfortunately he had none when I could have gone to Edinburgh. At this time most surgeons were using the clamp to secure the pedicle, but Thomas Keith was using the actual cautery, and it was supposed by many, even by himself, that the cautery was the principal cause of his success.

In 1876 and 1878 I again failed in my endeavor to witness operations by him. In 1879 I wrote to him that I had already written the chapter on ovariectomy for my forthcoming book, but would never consider it complete till I had seen him operate. He accordingly arranged for me to visit Edinburgh on the 1st of July,

1879, and I propose now to give an account of my observations made at that time.

Keith began the use of Lister's antiseptic method in March, 1877. Previously to that, his success had been from eighty-six to ninety per cent. ; while that of other operators had gradually crept from sixty-six up to seventy and seventy-five per cent., and in one or two instances to eighty. But under the antiseptic method Keith has cured of his last hundred cases ninety-seven per cent. ; seventy-three of these in succession without a single death.

If Keith cured from eighty-six to ninety per cent. before antiseptis, while others were curing seventy or even eighty ; and if he now cures ninety-seven per cent. with it, while others cannot get over eighty-eight or ninety with it, then I thought there must be something else beside antiseptis to account for this difference. With this feeling I went to Edinburgh, and I think I have learned the secret of his great success—a secret that he is hardly aware of himself, because he has rarely seen the operation performed by any one else.

Keith is systematic in everything he does. He uses a Lister's spray apparatus with three jets, which works six hours if necessary, and is placed to the left of the patient's head, at a distance of eight or nine feet from the seat of operation. Most other surgeons place it at the feet and to the left. By Keith's plan the spray interferes less with the assistants, and is not expended on their arms and elbows. After operations his sponges are thoroughly washed, and then soaked for ten or twelve hours in a solution of washing soda, which cleanses them of blood and fibrin. Previously to operation, they are soaked in carbolized water (one to twenty). Just before operation they are wrung out of a hot carbolized solution, and put in a tight covered tin pail, and placed near the fire to be kept warm till they are used. His operating table is twenty-two inches wide and thirty-three inches high. In his early operations he used chloroform as an anæsthetic. But in later years he has used ether, and thinks it safer than chloroform, and that recoveries under ether would always be greater than under chloroform, other things being equal. He thinks the depressing effects of chloroform contributed directly to the death

of some of his early cases. He carries out Listerism very carefully with hands, instruments and sponges, all well carbolized. He operates usually about eleven o'clock in the day, and the patient is only allowed a little tea and toast at eight in the morning. Ordinarily, he does not put his patients under any long preparatory treatment for the operation. I saw him perform two ovariectomies, and each case came to his infirmary on the day preceding operation. Just before operation he had visited two bad cases of diphtheria. Spencer Wells requires all spectators at his operations at the Samaritan Hospital to sign a pledge saying they had not attended any contagious or infectious disease, or been engaged in dissections or post-mortem examinations for a week. Keith believes that antiseptics protect his patients against all danger of infection, and does not exact from spectators any such pledge. The gentleman who gives ether for him is engaged in a large obstetric practice, and Keith never inquires whether he has puerperal fever or septic cases in hand. For myself, however strongly I believe in the protective power of Listerism, I would certainly prefer to have assistants and spectators clear of all suspicion of contagion.

The idea has gone abroad that Keith is a slow operator, simply because his operations are prolonged beyond the time that would be taken by most surgeons to do like operations. But this is a great mistake, for I have never seen any one cut down to the peritoneal cavity more quickly, though always cautiously, remove a tumor with greater celerity, or close up the external wound more rapidly than Dr. Keith. The time that he dallies is when he comes to arrest hæmorrhage, by ligating bleeding points and clearing out the peritoneal cavity, and when the operation is finished, you involuntarily ask yourself, Could it possibly have been done better? And the answer comes spontaneously: "Impossible."

Keith never hurries; he does nothing for display; he leaves no bleeding points; never closes the wound till he is sure that all oozing has ceased; till he is sure that the peritoneum is perfectly dry. When he performed his first operation in 1862, he was surrounded by old men in the profession, who had the dread of wounding the peritoneum continually be-

fore their eyes. He was obliged to break up extensive adhesions, and as a consequence there was a free exudation of blood. Before closing the external wound, he began to sponge out the peritoneal cavity, and suddenly thrust a large sponge down in the pelvis and brought it up saturated with blood. Squeezing it dry, he was about to repeat this process, when they all united in begging him not to do it! From their standpoint of view, there would be more danger of irritating the delicate peritoneum with the sponge than by leaving the blood there to be absorbed. He yielded against his judgment to entreaties, and closed the wound, leaving a large quantity of blood in the peritoneal cavity. On the third day his patient was profoundly septicemic, and in imminent danger. He recognized the source of danger, and had the courage to open the lower angle of the wound by removing two or three sutures. There was an immediate discharge of fetid bloody serum in large quantities, and from that moment the patient began to improve and soon got well. This made a profound impression upon Keith's mind, and he determined from that time never again to leave extravasated blood in the peritoneal cavity if he could possibly remove it. It was not long before he had an opportunity of putting this principle to the test of experiment, for his second case was a very bad one with extensive adhesions. He had to tie many vessels and bleeding points. There was a large exudation of blood in the pelvic cavity, and he sponged it all out thoroughly, after which he closed up the external wound, and his patient recovered without a single bad symptom. From this time he adopted the principle of never closing the external wound till he had controlled all oozing of blood and made sure that the peritoneal cavity was dry and clean.

To the adoption of this principle at the very commencement of his work, more than to any other one thing, was certainly due the great success he achieved before he began the antiseptic method; and its conjunction with antiseptics is the cause of his unparalleled success under Listerism. The first case I saw him operate on was a very unfavorable one. The patient was old and feeble, the tumor multilocular, and universally adherent. With a few strokes of the knife, the peritoneum was reached. He used no scissors, no tenaculum, no dissecting forceps, no director. But

three or four hemostatic forceps were hanging to the edges of the incision after it was completed. The tumor was so intimately adherent to the abdominal parietes that it was difficult to define the line of union. I have never seen anything more unyielding; it was almost like cartilage; it could be separated only by dissecting with a knife; it was, therefore, necessary to open the tumor and tear out its multiple contents with the hand before the sac could be separated from the adjacent parts.

His trocar tube is a half inch in diameter, and he used Nélaton's forceps to clasp the sac-walls. The pedicle was long and narrow. He clasped it with locked forceps, and cut away the sac before he separated remaining adhesions. The omentum was firmly adherent to the tumor by the whole of its free border, and, as it was separated, it was necessary to tie it in segments, some as large as the finger, with twelve separate catgut ligatures. After the omentum was disposed of, he broke up the remaining adhesions to the parietes on each side and to the intestine and meso-colon, applying catgut ligatures whenever it was necessary to restrain hæmorrhage.

When he had ligated all bleeding points, he turned his attention to the pedicle. It was long and slender, and he would have transfixed it with a soft iron wire and tied on each side if I had not been present; but to gratify me he took it off with the actual cautery. He uses carbolized catgut ligatures to all bleeding points in the peritoneal cavity, except for the pedicle, and for this he has at different times used the clamp, the ligature, and the cautery; but he prefers the cautery. In this instance, he encircled the pedicle with a Baker-Brown cautery clamp, which he screwed up with a moderate degree of firmness. He had a half-dozen cautery irons ready heated in a little portable charcoal furnace. Taking one of the irons out of the furnace, he found it at a red-heat, which was too hot, and he dipped it in cold water till it was as dark as if it had not been heated at all. He then placed its hatchet edge against the clamped pedicle, and by gentle motion back and forth he burned it off close to the upper surface. Its burning made a creaking, whistling noise. He then took another hot iron and dipped it in cold water till it was of a brown heat, and polished the burnt edge of the pedicle till it was quite



smooth and even with the surface of the clamp. He then cooled off the clamp with a sponge in cold water. Afterward he caught the pedicle with Koeberle's hemostatic forceps underneath the clamp, then unscrewed the clamp and separated its blades gently and very slowly. He watched the pedicle for a moment to see if there was any bleeding, and, as there was none, he removed the clamp entirely. The portion of the pedicle which had been compressed by the clamp had been squeezed so forcibly for ten or fifteen minutes that it looked transparent, like a bit of clarified horn. The part embraced by the clamp was about an inch and a half long, one-fourth of an inch wide, and about one-sixteenth of an inch thick. The burnt edge was browned, but had not thickened, charred substance sticking to it as I expected. I suggested to Keith that the forcible compression of the clamp might have been a sufficient hemostatic in a case like this, without the cautery. He said he had tried it, and it could not be depended upon, and that the cautery was essential to amalgamate the edges of the clamped pedicle. The pedicle was temporarily held in the lower angle of the wound by his hemostatic forceps, one on each side, just below the border that had been compressed by the clamp, while he proceeded (as the German surgeons say) to "make the toilet of the peritoneal cavity." He cleared out the peritoneal cavity with sponges, removing several ounces of extravasated blood and serum. Then he began to hunt bleeding points on surfaces from which adhesions had been broken up. He tied one point and then another, and another which had given rise to the smallest possible transudation of blood. Then the whole pelvic cavity was again sponged out, and again he searched for oozing vessels until he tied perhaps twenty points. He continued the search and ligation of seemingly unimportant little oozing points long after any other surgeon would have hastily closed up the external wound, leaving something to chance. Not so with Keith; he explores and re-explores, and you wonder why he does not at once finish the operation, when suddenly he seizes a point moistened with fresh blood, and throws a ligature around it. And so he goes on, till he feels sure that there is not a point left unsecured from which bleeding, after the establishment of reaction, could possibly take place.



At last he is ready to close the external wound. He places, according to the plan of Spencer Wells, a broad, flat sponge, perhaps six inches long by three or four wide, within the peritoneal cavity overlying the exposed intestines. The object of this is to protect the intestines against cold during the time of passing the sutures, and also to protect them from any blood that may drop into the peritoneal cavity from the needle punctures. He then passes two sutures at the upper angle of the wound, and two at the lower, according to the method of Spencer Wells; each suture having a needle at either side, and each needle passed from within the peritoneal membrane, and out through the skin. The intervening sutures were passed rapidly with an awl-shaped needle, six inches long, with an eye at the point, according to the method of Peaslee. The sutures were passed through the entire thickness of the abdominal walls, not more than from a quarter to the third of an inch from the edge of the incision, and embracing the peritoneal membrane. When the sutures were all introduced, the upper half of them were drawn up in their middle portions into the upper angle of the incision, and the lower angle, where they were held by assistants, thus making clear the opening into the peritoneal cavity by which he removed the sponge that had been placed there for protection, before the introduction of the sutures. When the sponge is removed, if it is bloody he immediately begins the search for bleeding points; but if it is dry the wound is ready for closure. But before doing this he hastily thrusts a small sponge, held by a locked forceps, to the bottom of the pelvic cavity, to determine if it is still dry. If all is well, the sutures are all drawn tight, and each tied separately, while an assistant presses the relaxed abdominal walls together with his hands, in a line under and parallel with the course of the wound. The sutures are then cut off, each within an inch or two of the knot. In this case, seven deep carbolized silk sutures were passed, with five intermediate surface sutures of horse's hair. The wound was dressed with thymol gauze, covered with cotton-wool and a flannel band. In cases like this, he formerly used a glass drainage-tube before the days of antisepticism, but now he does it only occasionally. The operation was begun at

twenty-five minutes after eleven, and finished at twenty-eight minutes after twelve—one hour and three minutes.

It is often the habit with novices in ovariectomy to saturate their patients with morphine or some preparation of opium for the first few days after operation; but Keith and Spencer Wells long ago learned that this practice was not only useless, but injurious, and their custom is to order twenty drops of laudanum, or its equivalent, to be given by the rectum after the patient recovers from the anæsthetic if there be pain enough to require it, to be repeated if necessary. For the first forty-eight hours the patient takes no nourishment. He gives only brandy and ice as they may be necessary. At the end of this time he allows light nourishment, such as beef-tea and milk, and in a day or two the bowels may be moved by enema, unless there is something to contraindicate its use. If all goes on well, a more nutritious diet may now be allowed. Keith attaches much importance to a free discharge of flatus from the rectum, and always watches this symptom with great anxiety.

I saw Keith perform his second operation on the 4th of July, 1879. (Here follow copious notes of each step of Dr. Keith's operation, made by Dr. Sims on the spot, which we need not here insert.)

The tumor weighed fifty-six pounds, thirty-four fluid, twenty-two solid. The india rubber sheeting inclosing the sponges at the mouth of the drainage-tube is unfolded from time to time; the sponges removed and squeezed over a graduated measure, and the quantity of fluid noted. This must be done more or less frequently, according to the amount of bloody serum discharged. At first it may be necessary to do this every four or five hours. As the quantity of fluid discharged decreases, this may be done at longer intervals. Keith never finds it necessary to make intraperitoneal injections, as is so frequently practiced here; it seems that the fluid finds its way out through the drainage tube as rapidly as it is extravasated.

We are indebted to Koeberle for drainage by abdominal incision. He first used it in 1867. But he has now, I believe, given it up almost entirely. Keith learned its use from Koeberle in 1868. He used it more frequently before he began antiseptics

than he does now; but he says there are exceptional cases in which he thinks drainage is absolutely essential to the safety of the patient. Spencer Wells and Thornton, since they adopted antiseptics, do not resort to the drainage-tube; they exclude it on the principle that Listerism renders all intra-peritoneal effusions, whether blood or serum, aseptic. Being aseptic, they can be absorbed in immense quantities, without danger to the life of the patient. But suppose we have not succeeded in rendering the peritoneal effusions perfectly aseptic, then we know that, in very small quantities, their absorption may be attended with great danger. How shall we then determine whether it will be necessary to use the drainage-tube or not? Are there any indications to guide our judgment in this matter?

In the two cases upon which I saw Keith operate, each had extensive adhesions to be broken up. In the first, he did not use the drainage-tube; in the second, he did. After leaving Edinburgh, I wrote to ask him the explanation of this difference of practice in two cases that were so much alike, and to ask if he could lay down a principle of action to guide us under all circumstances. In his reply, dated Edinburgh, July 29, 1879, he says: "I can hardly give you any rule about drainage, except that I do it where I expect much serous oozing, or where I am not sure that all bleeding has been stopped; and especially if, with one or other of these circumstances, the general condition is bad, or the patient very feeble."

This is a subject I have thought a great deal about, and I have lately adopted a plan to settle the question of drainage or no drainage, which I have twice carried into effect since I saw Keith operate.

Bloody serum is more dangerous in the peritoneal cavity than pure blood or pure serum, and requires drainage. If there are no adhesions to break up, the drainage tube is unnecessary. If there is ascites alone, it is unnecessary; but if we have ascites, complicating adhesions, then we may use the drainage-tube, and we are sure to have bloody serum evacuated by it. If we have adhesions alone, without ascites, and if we feel sure that every bleeding point has been secured, then we may, with the utmost confidence, close the external wound without the drainage-tube.

But if we are in doubt on this point, I think the following plan will remove the doubt. As before stated, Spencer Wells and Keith, and all their followers, place a large, flat sponge between the anterior parietes and the intestines during the time they take to introduce the sutures. In Keith's last operation, he passed sixteen sutures in six minutes. Any one else would have taken ten minutes to do the same work. During these from six to ten minutes, if the sponge that has been laid within the peritoneal cavity is found, on removal, to be perfectly dry, then we may be sure that there is no bleeding to be apprehended from the parts with which it has lain in contact. But if, as before explained, it contains two or three drachms of blood, then there are oozing vessels to be sought and tied.

To this I would add another diagnostic measure. Before introducing the large flat sponge over the surface of the intestines, pass a sponge, the size of a small orange, firmly held with locked forceps, down to the bottom of the Douglas's pouch, the handle of the forceps projecting from the lower angle of the incision. Then place the large sponge over the surface of the intestines, and proceed to pass the sutures, leaving the two sponges *in situ*. When the sutures are all introduced, draw half to each angle of the wound and remove the superficial sponge, as before described, and then squeeze it, and if it is dry, all is well in the region that it had just occupied. Then remove the small sponge, with the locked forceps, from the pelvic cavity, squeeze it, and if it, too, is found to be perfectly dry, then we may proceed to close the external wound without the drainage-tube. But, on the contrary, if the large superficial sponge contains blood, or bloody serum, then we must search out the source of oozing, and arrest it; and if we fail, we should resort to the drainage-tube. But, granting that the upper sponge is found to be dry, and the one from the pelvic cavity contains free blood, or bloody serum, then its source must be searched and secured; and if we fail, then we should resort to drainage, for I am convinced that Keith's plan of drying out the peritoneal cavity completely is the only one to give us perfect immunity against sepsis.

I have adopted this plan recently in two cases—that is, of placing a sponge in the pelvic cavity simultaneously with that on

the surface of the intestines. In the first case, there was ascites, complicating most extensive adhesions between the tumor, parietes, omentum, and intestines. The upper sponge was dry; the one in the pelvic cavity contained two or three drachms, not of pure serum, but of bloody serum; and here I used the drainage-tube, and felt afterward that I had done the best thing possible for my patient; for during the first twenty-four hours after operation, there were discharged sixteen ounces of bloody serum, half of it being blood, and all of it full of bacteria. On the next day there was nearly as much more. It gradually decreased till the fifth day, when it ceased entirely, and the drainage-tube was removed. My patient recovered rapidly, the pulse never going over ninety, nor the temperature over one hundred. In the second case, there was no ascites, but there were parietal adhesions; and the adhesions between the tumor and the omentum, and between the tumor and colon and mesocolon, were very firm and very extensive, and the dissection of the tumor from the intestine was exceedingly tedious and difficult. In this case, I was in doubt whether to use the drainage-tube or not; but using the sponges as before described, the one superficially and the other deep in the pelvis, and then removing them after the sutures had all been introduced, I found that the first one was perfectly dry, while the other contained a small quantity of pure blood. As I could not find the source of bleeding, I introduced a drainage-tube. From two to three ounces of pure arterial blood passed out through this tube every day for a whole week. It did not contain bacteria; still I believe it was safer that this pure blood (twelve or fourteen ounces in all), should pass from the peritoneal cavity, than remain there, become coagulated, and take its chances of absorption. Such a case is rare, and the bleeding occurred most probably from some little arteriole on the surface of the intestine, which had been stripped of its peritoneal covering for a distance of five or six inches by two. The practice was justified by the result, as the patient recovered perfectly.

Let me hope that others may find the plan here suggested as useful in determining this most difficult question of drainage or no drainage, as it has been to me in the two cases already described. The lesson that I had gathered from witnessing

Keith's operation is—never to close the external wound till we have secured every bleeding vessel, every oozing point, and made sure that the peritoneum is perfectly clean and dry. It was long thought that the treatment of the pedicle had much to do with the success of the operation. But I think now that it matters very little what we do with the pedicle, whether we use the clamp, the ligature, or the cautery, provided we take every care against the exudation of blood or bloody serum into the peritoneal cavity after the closure of the external wound.

Spencer Wells was the great apostle of the clamp; he did more to popularize its use in the profession than any other man; he honestly believed that the extraperitoneal method of securing the pedicle was the best and safest when practicable. As late as June and July, 1878, in his lectures before the "Royal College of Surgeons," he brought forward statistics from his immense experience to prove that the best treatment of the pedicle was by the clamp, and the worst by the ligature; as the mortality attending the latter far exceeded that of the former. But Listerism has killed the clamp, and even Spencer Wells uses it no longer; or so rarely as to make its use quite exceptional. He uses the intraperitoneal ligature, cutting it off close, and leaving the pedicle within the peritoneal cavity. His pupils, Bantock and Thornton, who succeeded him in "The Samaritan Hospital," in December, 1877, adopted the antiseptic method then, and with it the intraperitoneal ligature, never having used a clamp since that time. Thus we see the two greatest ovariatomists living, Spencer Wells (with his lieutenants, Bantock and Thornton) and Thomas Keith, both treating the pedicle by the intraperitoneal method—the one by the ligature and the other by the cautery, which settles forever the question of the clamp.—*College and Clinical Record*.

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#### TREATMENT OF DELIRIUM TREMENS AND OF ACUTE DELIRIUM.

Dr. Rousseau treats ordinary cases of delirium tremens with large and repeated doses of bromide of potassium, which he thinks succeeds better than opium, especially when given in an early stage (*Annales Médicopsychologiques*). Only once has he met



with the grave form assuming the febrile and delirious character. Remembering the treatment of Dr. Féréol in a similar case, he did not hesitate to adopt his method. After all the usual remedies had been exhausted without benefit, the physician in charge recommended the removal of the patient to a lunatic asylum. On admission he was extremely violent, flushed, eyes glistening, temperature elevated, pulse quick, full, and regular. He was incoherent, delivered interminable monologues, his attention could not be secured. He maintained that he had killed his wife and father, and expected every moment to be arrested by the police. He had hallucinations, and heard voices which made the most singular proposals to him. He thought himself in a forest, and took the persons around him for robbers. He committed a thousand extravagances, executed feats of strength, could not bear his clothes, sought a river to drown himself. From time to time he fell into a stupor with carphology, tried to seize small objects on his clothes, then suddenly awoke. There was a general tremor, speech was embarrassed, the tongue furred, the pupils contracted, and but little sensitive to light, the left a little more dilated than the right, the skin was anæsthetic, the head not apparently painful.

Ten grammes of potassium bromide were administered on admission, but the agitation and delirium continued during the day and night. The bromide was continued, and on the following day he kept for seven hours in a cool bath (*bain frais*), cold compresses being applied to his forehead from time to time. Whilst in the bath he became calm, with a marked diminution of the delirium and trembling. He passed an excellent night and made a rapid recovery, but continued as a precautionary measure to use the bromide, taking altogether fifty grammes in five days.

The same treatment was also adopted with success in a non-alcoholic case of acute delirium with extreme excitement—"one of those congestive manias which form the substratum of general paralysis." There was slight embarrassment of speech, pupils unequally dilated, pulse strong and quick, skin burning, the face red and congested. He cried, danced, committed all sorts of extravagances, refused to lie down, stripped himself naked, clasped the coverlet between his arms, saying he was going to be con-



finer of a reptile. He was completely delirious. Ten grammes of bromide of potassium produced no diminution of excitement during the night after admission. On the following day a cool bath was administered for seven hours with repeated cold irrigations of the head, the temperature of which was excessive. The agitation subsided, and intelligence was partially restored during the bath, after which tranquility was uninterrupted. Mental confusion and delusions still remaining, he was purged for five days by calomel and aloes, at the end of which time he was perfectly sane, with speech and pupils normal. Seen from time to time since, he continues quite well, now nine months since the attack.—*Medical Press and Circular*.

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#### THE THERAPEUTIC USE OF PHOSPHATE OF BISMUTH.

According to the *Union Pharmaceutique*, Dr. Tédénat prefers the phosphate of bismuth to the sub-nitrate. The anti-diarrhœic action of the phosphate is identical with that of the sub-nitrate. Thanks to its greater insolubility, however, the phosphate acts in slightly less doses, especially in affections of the stomach. In spite of the acidity of the fluids of the stomach, it is completely absorbed.

The dose varies according to the case; generally it is from 1 to 2 grammes. The mode of administration is the same as that of the sub-nitrate. In children it suffices to deposit the desired quantity on the tongue, and give the child the breast or the bottle. The salt is easily drawn into the stomach, and considerable doses may be given in this manner. In adults the remedy is held in suspension in some liquid. In many cases, lozenges of 1 to 2 grammes in weight are very useful; they disintegrate in the mouth, and the phosphate is gradually taken into the stomach.—*Medical Press and Circular*.

## SOCIETY MEETINGS.

Chicago Medical Society—Mondays, March 7 and 21.

West Chicago Medical Society—Mondays, March 14 and 28.

Biological Society—Wednesday, March 2.

## CLINICS.

## MONDAY.

Eye and Ear Infirmary—2 p. m., Ophthalmological, by Prof. Holmes; 3 p. m., Otological, by Prof. Jones.

Mercy Hospital—2 p. m., Surgical, by Prof. Andrews.

Rush Medical College—2 p. m., Dermatological and Venereal, by Prof. Hyde.

Woman's Medical College—2 p. m., Dermatological and Venereal, by Prof. Maynard; 3 p. m., Diseases of the Chest, Prof. Ingals.

## TUESDAY.

Cook County Hospital—2 to 4 p. m., Medical and Surgical Clinics.

Mercy Hospital—2 p. m., Medical, by Prof. Quine.

## WEDNESDAY.

Chicago Medical College—2 p. m., Eye and Ear, by Prof. Jones.

Rush Medical College—2 p. m., Medical, by Dr. Bridge; 3 p. m., Ophthalmological and Otological, by Prof. Holmes; 3:30 to 4:30 p. m., Diseases of the Chest, by Dr. E. Fletcher Ingals.

## THURSDAY.

Chicago Medical College—2 p. m., Gynæcological, by Prof. Jenks.

Rush Medical College—2 p. m., Diseases of Children, by Dr. Knox; 3 p. m., Diseases of the Nervous System, by Prof. Lyman.

Eye and Ear Infirmary—2 p. m., Ophthalmological, by Dr. Hotz.

Woman's Medical College—3 p. m., Surgical, by Prof. Owens.

## FRIDAY.

Cook County Hospital—2 to 4 p. m., Medical and Surgical Clinics.

Mercy Hospital—2 p. m., Medical, by Prof. Davis.

## SATURDAY.

Rush Medical College—2 p. m., Surgical, by Prof. Gunn; 3 p. m., Orthopædic, by Prof. Owens.

Chicago Medical College—2 p. m., Surgical, by Prof. Isham; 3 p. m., Neurological, by Prof. Jewell.

Woman's Medical College—11 a. m., Ophthalmological, by Prof. Montgomery; 2 p. m., Gynæcological, by Prof. Fitch.

Daily Clinics, from 2 to 4 p. m., at the Central Free Dispensary, and at the South Side Dispensary.

[Tenth Census of the United States.]

## CENSUS BULLETIN No. 65.

DEPARTMENT OF THE INTERIOR,  
CENSUS OFFICE, WASHINGTON, D. C., January 15, 1881.

The following statement exhibits the results of the first count of population according to the schedules returned to the Census Office by the enumerators of the several districts concerned.

The statement of the population in relation to any township, town, city, or county is still subject to possible corrections by reason of the discovery of omissions or duplications of names in lists of inhabitants returned.

## ILLINOIS—(IN PART.)

COUNTIES.	Total.	Male.	Female.	Native.	Foreign.	White.	Colored.*
Alexander.....	14,809	7,843	6,966	13,552	1,257	10,341	4,568
Bureau.....	33,189	17,100	16,089	27,000	6,189	33,033	156
Champaign.....	40,870	21,404	19,466	36,219	4,651	40,401	469
Clark.....	21,900	11,282	10,618	21,171	729	21,849	51
Coles.....	27,055	13,883	13,172	25,913	1,142	26,779	276
Cumberland.....	13,762	7,127	6,635	13,481	281	13,760	2
DeKalb.....	26,774	13,734	12,984	21,501	5,273	26,080	94
DeWitt.....	17,014	8,907	8,107	16,068	946	16,901	113
Douglas.....	15,857	8,265	7,592	15,209	648	15,747	110
Edgar.....	25,504	13,234	12,270	24,712	792	25,322	182
Edward.....	8,600	4,470	4,130	7,761	839	8,517	83
Ford.....	15,105	8,131	6,974	11,769	3,336	14,995	110
Franklin.....	16,129	8,268	7,861	15,985	144	16,105	24
Gallatin.....	12,862	6,676	6,186	12,488	374	12,187	675
Hamilton.....	16,712	8,519	8,193	16,449	263	16,669	43
Hancock.....	35,354	18,048	17,306	31,905	3,449	35,196	158

Hardin.....	6,024	3,139	2,895	5,884	140	5,890	164
Henderson.....	10,755	5,682	5,123	9,647	1,108	10,743	12
Henry.....	36,610	18,907	17,708	26,949	9,661	36,478	132
Iroquois.....	35,457	18,780	16,677	29,006	6,451	35,209	248
Jackson.....	22,508	11,736	10,772	18,924	1,584	20,979	1,529
Jasper.....	14,515	7,515	7,000	13,839	676	14,467	48
Jefferson.....	20,686	10,529	10,157	20,065	621	20,590	96
Jo Daviess.....	27,535	13,920	13,615	21,040	6,495	27,472	63
Johnson.....	13,079	6,676	6,403	12,961	118	12,946	133
Kankakee.....	25,050	13,032	12,018	18,797	6,253	24,973	77
Knox.....	38,360	19,437	18,923	31,734	6,626	37,382	978
LaSalle.....	70,420	36,164	34,256	52,582	17,838	70,331	89
Lawrence.....	13,663	7,057	6,606	13,383	280	13,345	318
Lee.....	27,494	14,217	13,277	22,347	5,147	27,430	64
Livingston.....	38,453	20,401	18,052	31,225	7,228	38,153	300
McDonough.....	27,985	14,249	13,786	26,412	1,573	27,840	145
McHenry.....	24,914	12,798	12,116	20,067	4,847	24,863	41
McLean.....	60,115	30,971	29,144	52,404	7,711	59,432	683
Macon.....	30,672	15,953	14,719	28,212	2,460	30,315	857
Madison.....	50,141	26,147	23,994	38,518	11,623	47,442	2,699
Massac.....	10,443	5,320	5,123	9,900	543	8,740	1,703
Mercer.....	19,505	10,127	9,378	16,964	2,541	19,468	37
Monroe.....	13,682	7,255	6,427	10,497	3,185	13,626	56
Moultrie.....	13,705	7,102	6,603	13,269	436	13,689	16
Peoria.....	55,427	28,225	27,202	44,527	10,900	54,904	523
Perry.....	16,008	8,242	7,766	13,985	2,023	15,230	778
Piatt.....	15,383	8,280	7,303	14,717	866	15,550	33
Pope.....	13,256	6,707	6,549	12,866	390	12,652	604
Pulaski.....	9,507	4,890	4,647	9,146	361	6,238	3,269
Randolph.....	25,691	13,364	12,327	21,886	3,805	24,393	1,298
Rock Island.....	38,315	19,755	18,560	27,914	10,401	37,774	541
Saline.....	15,940	8,083	7,847	15,809	131	15,356	584
Shelby.....	30,282	15,635	14,647	28,529	1,753	30,205	77
Stark.....	11,209	5,855	5,354	10,010	1,199	11,205	4
Tazewell.....	29,679	15,343	14,336	24,674	5,005	29,587	92

## CENSUS BULLETIN No. 65.—Continued.

COUNTIES.	Total.	Male.	Female.	Native.	Foreign.	White.	Colored*
Union.....	18,102	9,158	8,944	17,428	674	17,833	269
Vermillion.....	41,601	21,587	20,014	38,605	2,996	41,400	201
Wabash.....	9,945	5,098	4,847	9,471	474	9,888	57
Washington.....	21,115	10,922	10,195	16,852	4,265	20,905	212
Wayne.....	21,297	10,791	10,506	20,979	318	21,283	14
White.....	23,089	12,000	11,089	22,386	703	22,556	533
Whitesides.....	30,888	15,887	15,001	26,048	4,840	30,810	78
Will.....	53,431	28,447	24,984	37,256	16,175	52,727	704
Williamson.....	19,326	9,902	9,434	19,013	313	19,073	253
Woodford.....	21,630	11,154	10,476	17,522	4,108	21,547	83

\*Including, in Alexander Co., 1 Indian; in Bureau Co., 1 Indian; in Champaign Co., 4 Indians; in Coles Co., 1 Chinese; in Edgar Co., 1 Chinese; in Iroquois Co., 1 Indian; in Jackson Co., 1 Indian; in Jo Daviess Co., 1 Japanese and 6 Indians and Half-Breeds; in Kankakee Co., 2 Chinese; in Knox Co., 2 Chinese and 2 Indians; in LaSalle Co., 1 Chinese; in McDonough Co., 1 Indian; in McLean Co., 4 Chinese; in Macon Co., 3 Chinese and 2 Indians; in Madison Co., 1 Chinese and 2 Indians; in Perry Co., 10 Indians; in Peoria Co., 12 Chinese; in Pope Co., 5 Chinese and 29 Indians; in Rock Island Co., 2 Chinese and 2 Indians; in Tazewell Co., 1 Chinese and 2 Indians; in Vermillion Co., 2 Chinese.